



Parking Management Action Plan For Balboa Park Central Mesa & Inspiration Point

Prepared for:
City of San Diego
Park & Recreation Department

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INTRODUCTION	1
The Need for Parking Management	1
Master Plan and Precise Plan Recommendations	1
Objectives of this Plan	2
Sources of Information	2
I. CURRENT OPERATIONS	3
Employee, Docent, Volunteer and Visitor Parking	3
<i>Locations</i>	3
<i>Existing Use of Parking</i>	6
<i>Employee/ Docent/ Volunteer Demand</i>	8
<i>Walking Distance & Time</i>	10
<i>Length of Stay</i>	10
<i>Valet Parking</i>	11
<i>Security</i>	12
<i>Service and Delivery Access</i>	12
<i>Inefficiencies</i>	12
Shuttle System	13
<i>Route</i>	13
<i>Fare</i>	13
<i>Hours of Service</i>	13
<i>Ridership</i>	16
<i>Vehicle</i>	17
<i>Operating Cost & Funding</i>	17
II. RECOMMENDED PARKING MANAGEMENT PLAN	19
Manage Employee Parking	19
<i>Locations</i>	20
<i>Docents and Volunteers</i>	22
<i>Accessible Parking</i>	22
<i>Walking Distance & Time</i>	22
<i>Security</i>	24
Protect Convenient Visitor Parking	25
<i>Locations</i>	25
<i>Methods to Regulate Visitor Lots</i>	25
<i>Short-Term Parking</i>	26
<i>Accessible Parking</i>	26
<i>Walking Distance and Time</i>	26
<i>Security</i>	27
Enforcement	27
<i>Methods</i>	27
<i>Staffing Requirements</i>	27
Efficiencies	28
<i>Re-striping</i>	28
<i>Expansion within Existing Lots</i>	29
<i>Plaza de Panama Re-organization</i>	29

<i>Managing Dumpsters</i>	29
Service and Delivery Access.....	30
Valet Parking.....	30
Special Events	30
III. SHUTTLE PLAN.....	32
<i>Mission</i>	32
<i>Routes</i>	32
<i>Hours of Service</i>	37
<i>Hours of Service</i>	38
<i>Ridership</i>	38
<i>Performance Requirements for a New Vehicle</i>	41
<i>Management Actions to Support Continued Use of Existing Vehicle</i>	41
<i>Facility Needs</i>	42
<i>Special Events</i>	42
<i>Operating Costs</i>	42
<i>Funding</i>	44
IV. WAYFINDING	45
<i>Principles</i>	45
<i>Design Guidelines</i>	46
<i>Recommended Wayfinding Plan</i>	46
<i>Directional Signs</i>	48
<i>Identity Signs</i>	56
V. PEDESTRIAN LINKAGES FOR PARKING ACCESSIBILITY	62
<i>Parking Areas</i>	62
<i>Shuttles</i>	62
<i>Sidewalks</i>	62
<i>Priority Needs</i>	63
<i>Priority Needs</i>	64
<i>Future Modifications</i>	66
VI. BENEFITS AND COSTS.....	75
<i>Benefits</i>	75
<i>Costs</i>	75
VII. MONITORING SUCCESS	77
APPENDICES	79
A. Employment Transportation Survey Form	
B. Estimated Costs (Planning Level)	

List of Tables

Table I-1. Existing Parking Supply.....	5
Table I-2. Employee Arrivals	6
Table I-3. Use of Inspiration Point Parking.....	7
Table I-4. Availability of Parking at Inspiration Point and Federal/Aerospace Lot.....	8
Table I-5. Employment by Day	8
Table I-6. Mode of Travel.....	9
Table I-7. Close-In Parking Needs.....	10
Table I-8. Walking Distance and Time Between Employee Parking and Worksites.....	10
Table I-9. Users' Average Length of Stay.....	11
Table I-10. Valet Vehicles Served by Year	11
Table I-11. Existing Shuttle Service –Schedule and Hours per Year	15
Table I-12. Shuttle Ridership and Capacity by Month	16
Table I-13. Shuttle Operating & Maintenance Costs	17
Table II-1. Institutions' Report of Accessible Parking Needs	22
Table II-2. Changes to Employee Walking Distance	23
Table II-2a. Changes to Employee Travel Time	23
Table II-3. Visitor Parking.....	25
Table III-1. Estimated Shuttle Ridership	38
Table III-2. Recommended Hours of Service Using Existing Vehicle.....	39
Table III-3. Minimum Hours of Service Using New Vehicles	40
Table III-4. Future Shuttle Operating Costs.....	43
Table IV-1. Estimated Costs (Planning Level)	76

List of Figures

Figure I-1. Existing Parking Locations	4
Figure I-2. Parking Occupancy by Location	6
Figure I-3. Employee/Docent/Volunteer Parking Demand by Hour	9
Figure I-4. Current Shuttle Route	14
Figure I-5. Balboa Park Shuttle – 5 Year Ridership History FY 2001 – 2005	17
Figure II-1. Back-of-House Employee Parking Locations	20
Figure II-2. Recommended Employee Parking Locations Based on Worksite	21
Figure III-1. Employee Shuttle Route: West Prado to Federal Lot	33
Figure III-2. Employee Shuttle Route: East Prado to Inspiration Point	34
Figure III-3. Weekend Employee Shuttle Route	35
Figure III-4. Visitor Shuttle Route	37
Figure IV-1. Wayfinding Signs – Key Map	47
Figure IV-2. Directional Sign Design Guide	48
Figure IV-3. Directional Signs	49
Figure IV-4. Identity Sign Design Guide	56
Figure IV-5. Identity Signs	57
Figure V-1. Pedestrian Linkages – Location of Recommended Improvements	63

INTRODUCTION

This action plan details recommended steps to implement a Parking Management Plan for selected portions of Balboa Park's Central Mesa and Inspiration Point. It is intended for implementation primarily using existing parking, shuttle and financial resources. Recommendations for future shuttle enhancements are also provided.

The Need for Parking Management

Balboa Park is one of San Diego's most beloved places. The Prado and Palisades, with their museums, theaters, cultural attractions and gardens, form the hub of the park and a center of the park's rich history. With a high volume of visitors and staff using this concentrated area, the park, especially its parking, is at times highly congested.

Parking in the Central Mesa has been a long-standing issue of concern for Park visitors and institutions alike: parking availability is linked, both actually and perceptively, with attendance at the institutions. This issue was identified in the 1989 Balboa Park Master Plan and subsequent Central Mesa Precise Plan which proposed expanding parking. Parking has become a limiting factor for attendance. With the backing of Senator Christine Kehoe, the State funded a \$975,000 grant to further study the issue to provide direction in the resolution. The result is the Balboa Park Land Use, Circulation and Parking Study.

Over the past three years the Balboa Park Land Use, Circulation and Parking Study identified a number of issues and potential solutions to alleviate parking congestion. Two ideas emerged in that study that warranted further investigation: the use of shuttles to move people more efficiently to park destinations and the management of parking to make more parking available to visitors near the museums.

This report presents the results of these further investigations and finds that significant improvements in parking for visitors can be achieved through the management of parking and more effective use of existing (or new) shuttle vehicles.

Of the more than 1,200 employees and volunteers who work in the institutions in the Prado and Palisades, over 800 are present at one time. In the current condition, where parking is unmanaged and available on a first-come, first-served basis, there is a tendency for employees and volunteers to fill up the close-in spaces early in the morning, making them unavailable to visitors, who arrive later. Therefore, if employee and volunteer parking can be largely relocated to more remote locations, more parking for visitors can be available for visitors when they arrive.

Master Plan and Precise Plan Recommendations

The 1989 Master Plan and subsequent Central Mesa Precise Plan both recommend improvements to visitor and employee parking including directional signs, walkways, and shuttle service, and also recommend implementation of a parking management plan. The 2004 Land Use, Circulation and Parking Study specifically identifies the opportunity to

manage employee parking as a first step to increase visitors' access to parking near major destinations.

Objectives of this Plan

This action plan focuses on the opportunity to achieve new parking efficiencies by providing specific recommendations to implement parking management for the Central Mesa and at Inspiration Point. Two major objectives guide this effort:

1. Implement parking management
2. Use existing resources to accomplish the task.

This action plan describes current employee, docent, volunteer and visitor parking patterns, analyzes existing shuttle operations, and recommends methods and policies to manage parking and shuttle resources to achieve greater efficiency. It addresses signage, staffing, security, and accessibility requirements to facilitate successful parking management and identifies the costs and benefits to undertake the plan.

Sources of Information

The plan relies on a variety of sources for information about employment, visitors and their parking needs. These sources include:

- Balboa Park Cultural Partnership for its 2004 survey of employee transportation patterns.
- City of San Diego Park & Recreation Department for the current inventory of parking supply in the park, for existing shuttle ridership and funding, and for a 2005 security survey of park employees.
- Balboa Park Land Use, Parking and Circulation Study, 2004, for information about visitor travel characteristics
- Old Town Trolley, the contracted shuttle operator, for schedule and operating information
- Sunset Parking for information on valet parking trends in Balboa Park.
- Supplemental information was provided with the assistance of the Balboa Park Cultural Partnership with a survey of institutions to identify current numbers and work schedules of employees, docents and volunteers. Additionally, the consultants observed parking occupancy patterns and assessed wayfinding and walkways.

Analysis of this information was shared with the Balboa Park Committee which also reviewed the recommendations as they were developed.

I. CURRENT OPERATIONS

Effective parking management begins with a thorough understanding of the habits and practices of the people using parking. This section presents findings from a variety of sources and analyses focused on parking and shuttle operations.

Employee, Docent, Volunteer and Visitor Parking

Over 3,700 parking spaces serve the core of the Central Mesa (excluding the Zoo) and Inspiration Point. The Zoo has over 2,800 spaces. With few exceptions, these are public spaces, available to anyone regardless of their purpose in the park. The park's cultural institutions and activities typically do not control or operate parking, relying instead on publicly provided lots throughout the Central Mesa. At the Zoo, parking is already managed to the extent that many employees park in locations not available to visitors. For that reason, Zoo parking is not a primary focus of the parking management plan.

Locations

Figure I-1 shows current parking locations in the Central Mesa and at Inspiration Point. Table I-1 summarizes the number of spaces in individual lots. Most spaces allow unrestricted parking though 5% of spaces have some restriction.

Additionally, small clusters of spaces exist behind various buildings, out of sight or out of reach of visitors. Such spaces mainly serve employees who know how to reach them and who can enter their buildings from back doors or loading docks. Approximately 70 “back-of-house” spaces function as essentially private employee spaces.



Back-of-house parking at the House of Charm

Figure I-1. Existing Parking Locations



Table I-1. Existing Parking Supply

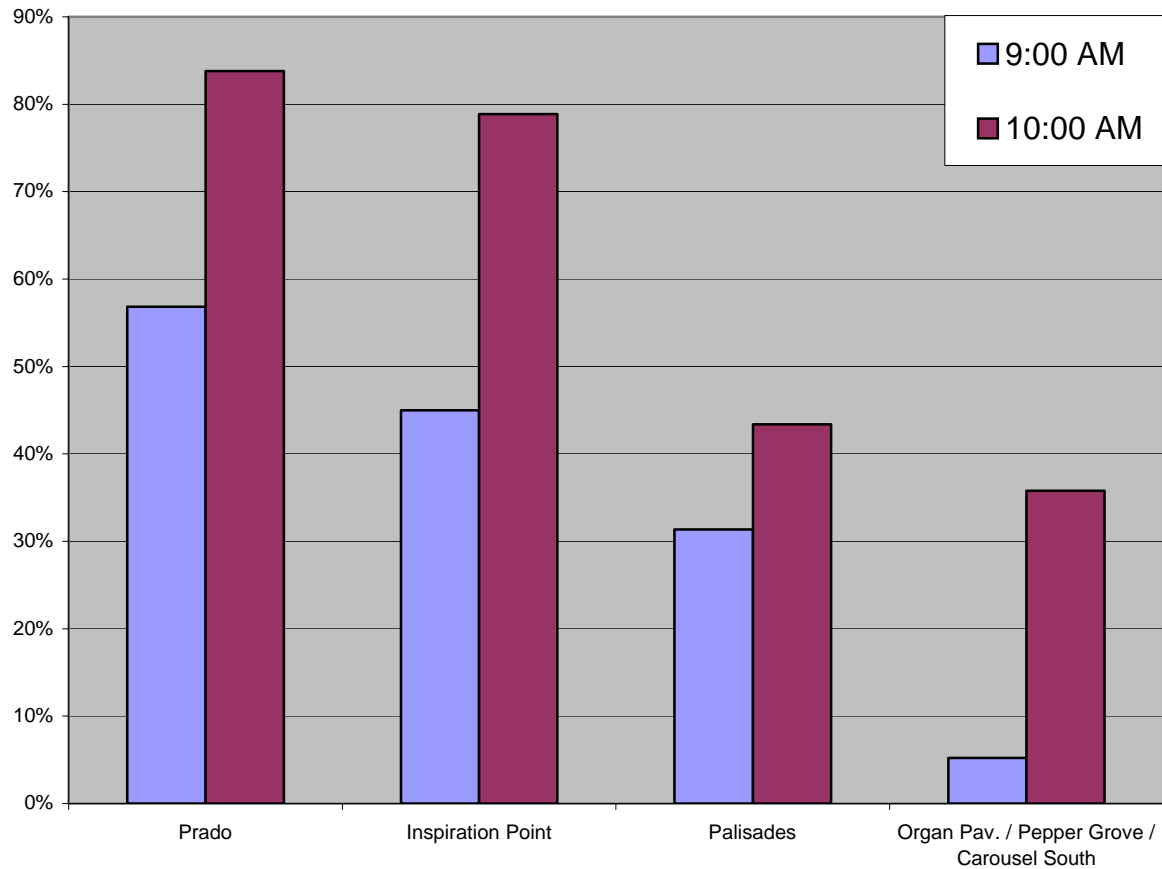
Central Mesa Lots	Unrestricted	Accessible	Bus/RV	Motor-cycle	Passenger Loading	15 Min.	20 Min.	3 Hour	Permit	Other	Total
Alcazar Garden	107	3		1			6		1		118
Botanical Building	23	3							3		29
Carousel Lot (North)	100	3									103
Carousel Lot (South)	202	4			1	1					208
Casa de Balboa	84	4		2			6				96
Centro Cultural de la Raza	10										10
Federal Building, West	96	7									103
Federal Building	403	13									416
Gold Gulch	26	3								15	44
Palisades Parking Lot	272	16		8	3					3	302
Pepper Grove, North	144	11	3				1		17		176
Pepper Grove, South	113	5									118
Plaza de Panama		19		5	3	9	6	32		1	75
Spanish Village	19	2									21
Spreckels Organ Pavilion	359	8									367
Village Place, South	93	6									99
World Beat Center	4	1									5
"Back-of-House" Spaces										70	70
Sub-Total	2,055	108	3	16	7	10	19	32	21	89	2,360
Streets											
Old Globe Way		1				3					4
Pan American Road, West					2						2
Park Blvd.	225										225
Presidents Way	25										25
Village Place	48	4			5	9	6				72
Sub-Total	298	5	0	0	7	12	6	0	0	0	328
Central Mesa Total	2,353	113	3	16	14	22	25	32	21	89	2,688
Inspiration Point	1,047	20	23								1,090
TOTAL	3,400	133	26	16	14	22	25	32	21	89	3,778

Source: City of San Diego, Park and Recreation Department

Existing Use of Parking

Figure I-2 shows occupancy patterns in lots closest to the Prado, at the Palisades, in more distant lots and in the Inspiration Point lots. Prado lots reach practical capacity by 10 a.m. (practical capacity is the point when the lot appears full due to the difficulty of finding the few remaining spaces, generally occurring at 85% occupancy for an unattended parking lot).

Figure I-2. Parking Occupancy by Location



Source: Tilghman Group

Table I-2 shows the proportion of employees having arrived by hour in the morning.

Table I-2. Employee Arrivals

	Arrive by 8:00 a.m.	Arrive by 9:00 a.m.	Arrive by 10:00 a.m.
Employees	32%	82%	94%
Volunteers	5%	36%	74%

Source: Balboa Park Cultural Partnership, 2004

High levels of parking occupancy occur near the Prado by 9:00 a.m., well before most institutions open at 10:00 a.m., indicating that employees, not visitors, comprise the majority of people parking. Based on a 2004 survey of employees done by the Balboa Park Cultural Partnership, 82% of employees reported arriving by 9:00 a.m. and parking in lots close to their places of work. This represents over 550 parking spaces at the Prado alone being used by employees by 9:00 a.m., leaving few for visitors arriving after that time.

At Inspiration Point, occupancy grows quickly due to use by non-park users: Naval Medical Hospital employees and visitors; City College students; and some commuters. Table I-3 summarizes Inspiration Point's use.

Table I-3. Use of Inspiration Point Parking

User	Spaces	% of Total
Naval Medical Center	540	49%
City College	220	20%
Balboa Park	60	6%
Commuters	25	2%
Unoccupied	245	22%
Total	1,090	100%

Source: Tilghman Group

Table I-4 summarizes the availability of parking at Inspiration Point and the Federal lot. These lots have consistently been underused by park visitors and employees and offer the greatest opportunity for improving parking efficiency.



Heavy use at Inspiration Point



Limited use at Federal Lot

Table I-4. Availability of Parking at Inspiration Point and Federal/Aerospace Lot Supply

Lot	ADA	RV/Bus	Regular	TOTAL
Inspiration Point	20	23	1047	1090
Federal	13	0	403	416
Aerospace	7	0	96	103
Total Spaces	40	23	1546	1609

Supply Adjusted to 95% practical capacity:

	ADA	RV/Bus	Regular	TOTAL
Inspiration Point	19	22	995	1036
Federal	12	0	383	395
Aerospace	7	0	91	98
Total (Practical Capacity)	38	22	1469	1529

Occupancy

	ADA	RV/Bus	Regular	TOTAL
Inspiration Point	5	1	796	802
Federal	0	0	16	16
Aerospace	5	0	67	72
Total	10	1	879	890

Availability (Practical Capacity less Occupancy)

	ADA	RV/Bus	Regular	TOTAL
Inspiration Point	14	21	199	234
Federal	12	0	367	379
Aerospace	2	0	24	26
Total	28	21	590	639

Source: Tilghman Group

Employee/Docent/Volunteer Demand

Based on the survey of cultural institutions, employment peaks on Thursdays. Table I-5 shows the number of employees by day of the week. Weekend employment drops significantly with Saturday having just over half (55%) of the weekday peak, and Sunday having almost exactly half.

Table I-5. Employment by Day

	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Employees	417	883	998	999	1,044	1,031	440
Docents	22	37	43	40	45	42	29
Volunteers	200	170	191	231	193	199	241
Total	639	1,090	1,232	1,270	1,282	1,272	710

Source: Balboa Park Cultural Partnership; Tilghman Group

Persons working at park institutions share similar means of travel in getting to work. From 81% to 87% drive to work, as shown in Table 1-6.

Table I-6. Mode of Travel

	Drive Alone	Carpool	Drop-Off	Bus	Walk/Bike	Total
Employees	77%	4%	6%	9%	4%	100%
Docents	74%	10%	10%	6%	0%	100%
Volunteers	81%	6%	8%	4%	1%	100%

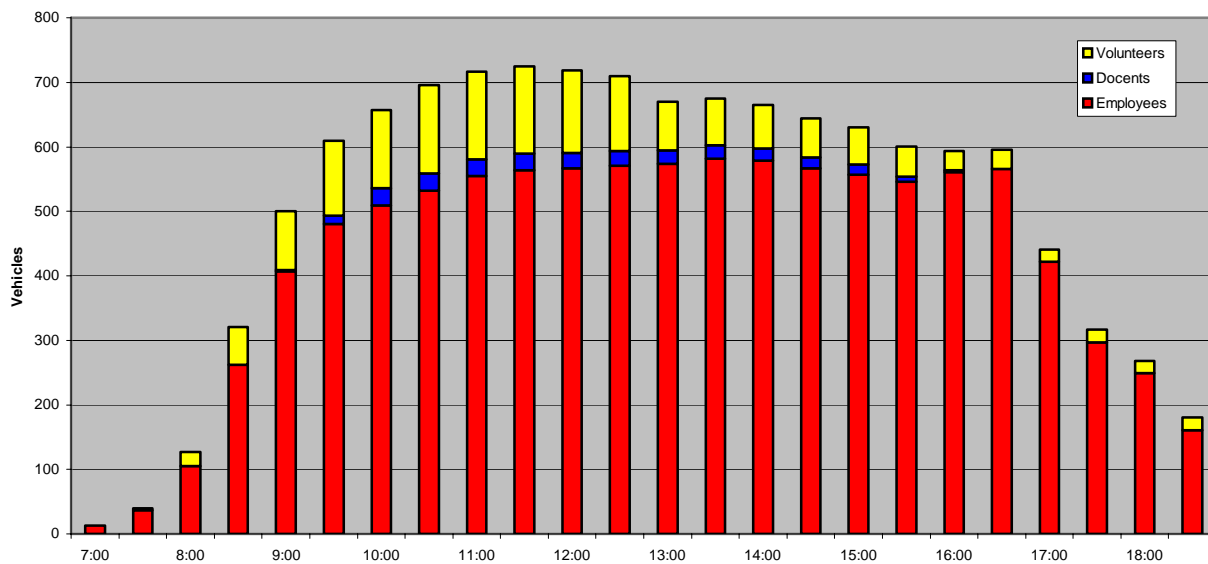
Source: Tilghman Group

Employees do not ride the shuttle since they are able to park within walking distance of work.

Figure I-3 illustrates employee/docent/volunteer parking demand derived from the peak weekday employment, mode of travel and arrival times and departure times reported by the institutions and employees.

Figure I-3.

Employee/Docent/Volunteer Parking Demand by Hour



Source: Tilghman Group

Demand peaks between 11:00 a.m. and noon with 724 vehicles on a Thursday, the highest employment day. This chart highlights the arrival of non-visitor vehicles by 10:00 a.m. and the number of hours their vehicles occupy parking close to the institutions.

Less than 3% of employees possess accessible parking permits. Table I-7 lists the need for accessible parking and other close-in parking as reported by the institutions.

Table I-7. Close-In Parking Needs

	Accessible Permits	Need Close-In Spaces
Employees	28	19
Docents	36	5
Volunteers	32	18

Source: Tilghman Group

Walking Distance & Time

Table I-8 provides walking distances and times from parking to work sites based on employees' reported parking locations, obtained from the Balboa Park Cultural Partnership's employee survey. Walking times assume a modest pace of 2 miles per hour, reflecting a conservatively low average.

Table I-8. Walking Distance and Time between Employee Parking and Worksites

Institution	Primary Parking Lots	Mean Walk Distance (feet)	Mean Walk Time (Minutes)
Art Institute/Mingei	Acazar; Organ Pavilion	735	3.1
Old Globe	Alcazar; Organ Pavilion	960	4.0
House of Hospitality	Alcazar; Casa de Balboa	610	2.5
Japanese Friendship Garden	Organ Pavilion	720	3.0
Museum of Man	Alcazar	500	2.1
Museum of Art	Alcazar; Organ Pavilion	1,160	4.8
Timken	Casa de Balboa	780	3.2
Fleet Science Center	Pepper Grove North	125	0.5
Historical Society	Casa de Balboa; Carousel South	715	3.0
Junior Theater	Carousel South	695	2.9
Model Railroad Museum	Casa de Balboa	540	2.3
Natural History Museum	Bea Evenson (Natural History)	270	1.1
Mus. of Photographic Arts	Casa de Balboa	540	2.3

Source: BPCP; Tilghman Group

Visitors, however have longer walks from parking to their destinations. Based on interviews conducted for the Land Use, Circulation and Parking Study, visitors walk an average of 1,435 feet, considerably longer than any employee walks.

Length of Stay

Length of stay is a vital measure for developing a successful parking management strategy. Employees, volunteers, docents, and visitors all exhibit significantly different patterns. Table I-9 lists the average length of stay for each user group.

Table I-9. Users' Average Length of Stay

User	Average Length of Stay (Hours)
Employees	8
Volunteers	5
Visitors	3

Source: BPCP 2004; Land Use, Circulation & Parking Plan

When employees arrive first and take prime parking spots, they displace other users for the entire workday. This has a compounding effect: one employee vehicle displaces 2.7 visitor vehicles. Furthermore, visitor vehicles carry an average of 3 people, so 8 visitors are displaced by a single employee. Considering the 550 spaces used by employees at the Prado, over 4,000 visitors per day are prevented convenient parking in lots close to their destinations.

Valet Parking

Beginning in 2001, primarily as a service to customers of the Prado Restaurant, valet parking has grown into a self-sustaining service offering a new parking option to visitors at the Plaza de Panama. Catering primarily to restaurant and Old Globe patrons, the valet service currently handles up to 240 vehicles per day, according to its operator, Sunset Parking Service. Table I-10 shows the growth experienced since 2001.

Table I-10. Valet Vehicles Served by Year

Year	Vehicles Served
August 2001 – July 2002	13,150
August 2002 – July 2003	14,445
August 2003 – July 2004	15,169
August 2004 – July 2005	20,049

Source: Sunset Parking Service

The valet station is located adjacent to the shuttle stop in the Plaza de Panama. Valet operators park vehicles in the Alcazar lot where one to two aisles are allocated to valet use during evenings from 5:00 p.m. to 2:00 a.m. Vehicles are staged for retrieval along the Mall between the Plaza and the Organ Pavilion.

To retrieve vehicles from the Alcazar lot, operators must make a left-turn from the exit road to the Mall entering the plaza. As this turn is not a normally provided for, a traffic director is required control traffic for safety.

Some circulation conflicts have occurred in the Plaza de Panama with the valet operation. Only three vehicles can be handled at the station, resulting in inadequate stacking room for arriving vehicles at busier times. Awkward access occurs for drivers arriving via Laurel Street from the west – some try to turn at the south end of the Plaza to reach the valet station. This is legal but slow, and any delay causes traffic to back up over the Cabrillo Bridge.

Security

In a security survey of park employees done in April 2005, 5 of 35 respondents indicated that they did not feel safe when arriving or leaving work. In particular, they shared concerns about darkness when walking to and from parking.

Service and Delivery Access

Four categories of service and delivery vehicles use the park:

1. Garbage trucks empty trash, recycling and garden waste dumpsters that are mainly located at the backs of buildings and in some parking lots. Garbage pick-up typically occurs between 6:00 and 8:00 a.m. Monday through Saturday.
2. Delivery vans bring goods and packages daily to individual institutions and businesses such as the restaurants. Vans primarily use the Plaza de Panama, Pan American Plaza, Village Place and the Casa de Balboa lot. Delivery times occur throughout the day.
3. Larger trucks serve museums when traveling exhibits need to be loaded or unloaded. When such loading occurs, it typically is limited to the morning between 6:00 and 10:00 a.m.
4. Personal vehicles belonging to employees of institutions deliver artifacts or equipment to buildings.

Garbage pick-up and exhibit loading have been scheduled to limit or avoid conflicts with visitors and generally functions well. However, garbage dumpsters in parking lots too often occupy a parking stall. Unscreened dumpsters present a poor image when located in or adjacent to parking lots and sidewalks.

Inefficiencies

The current parking system operates mainly on a first-come, first-serve basis. As such, it represents a passive approach to managing parking. In serving different users with distinctly differing parking needs, that approach creates particular inefficiencies, including:

1. Excessive hunting for parking. Employees, arriving first, get their choice of prime spaces close to the institutions. Visitors, arriving later, must hunt for available spaces. Without means to know where parking is available when close-in lots are full, visitors are forced to try lots individually to find a space.
2. Unnecessary vehicle miles of travel. For example, the Alcazar lot is full by 10:00 a.m. when visitors begin arriving. One of the first parking opportunities for visitors entering the park from the west, a driver would travel 0.3 miles entering the lot, seeking a space and exiting the lot. Observations show that just after 10:00 a.m. the rate of entry is 72 vehicles per hour traveling a total of 24 vehicle miles. Over a day, this easily amounts to 100 vehicle-miles-of-travel (conservatively assuming that the rate of entry averages less over the day). Within the Central Mesa, the daily total could well exceed 200 vehicle miles of travel, all of which is unnecessary.
3. Excessive walking distances for visitors, especially compared to employees. Visitors walk an average of 1,435 feet from parking to their destinations while employees at Prado institutions walk 565 feet on average. While just over ¼ mile, this is a long *average* distance considering the number of small children, seniors and others who may tire easily from the walk. It should represent more of a maximum distance.

4. Confusion and frustration among visitors. A constant uncertainty exists about where to park, and how to reach the destination once parked. This is evident from the frequency with which people ask for directions on the street and in parking lots, and from vehicles looping through the Plaza de Panama to turn around and restart the hunt for parking.
5. A perception that parking is inadequate for visitors. This in turn creates a poor image for the park and its institutions, and may work to discourage repeat visits.
6. An artificially constrained parking supply for busy days. As visitors become discouraged about using more distant parking, such as Inspiration Point, the parking system cannot meet its full potential.

Shuttle System

The current shuttle system began operating in 1991. Recommended by the Master Plan, its purpose is to reduce traffic in the park's heavily used pedestrian areas.

Route

Figure I-4 shows the current route. It has evolved over the years in response to ridership trends – for instance, it originally served Marston Point, but was later re-routed to serve other portions of the West Mesa instead.

Frequency of service varies depending on the route segment. For example, the portion between Inspiration Point and the Plaza de Panama operates every 10 to 12 minutes depending on the day, while the segment to 6th Avenue operates once every 30 minutes.

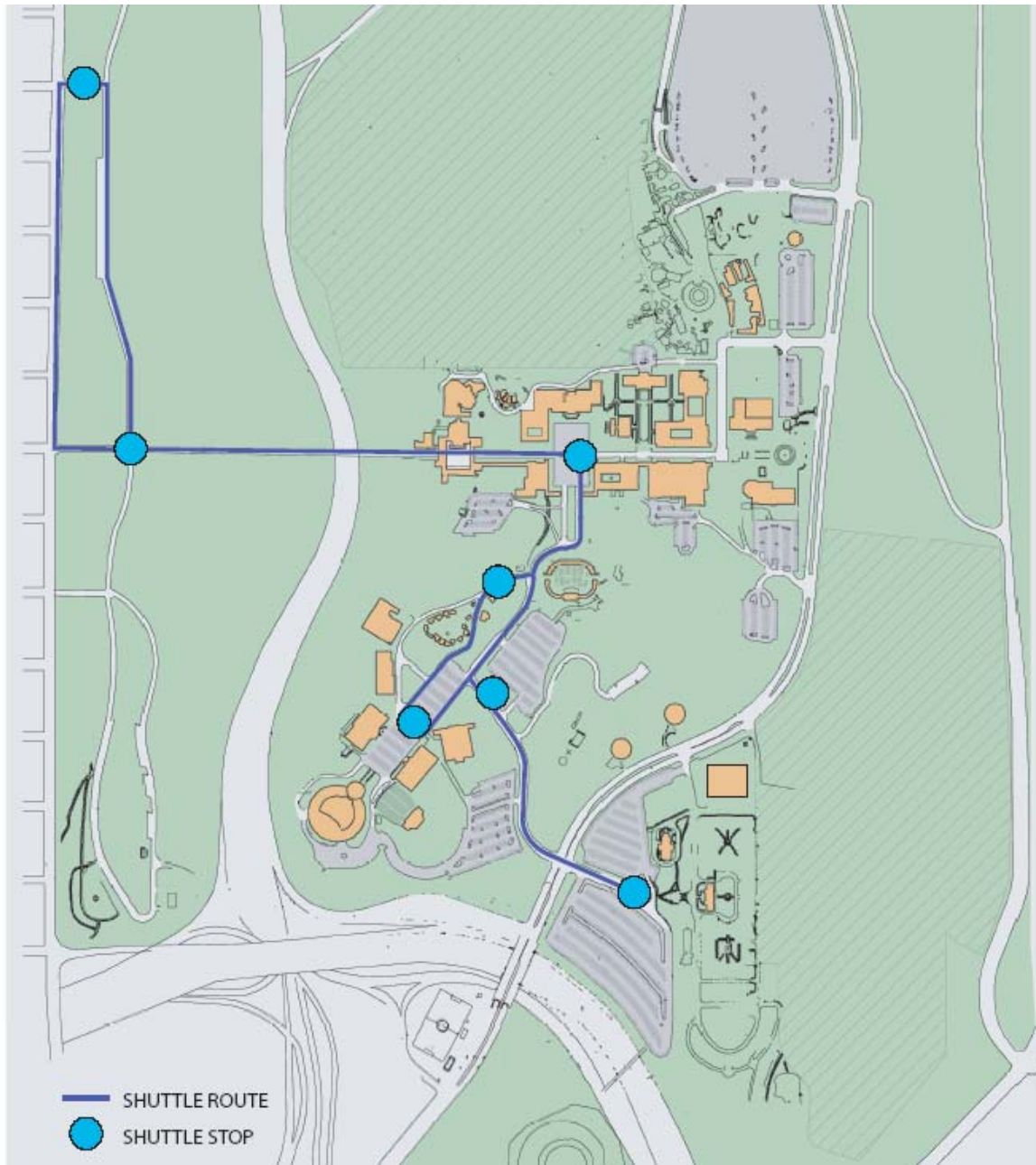
Fare

No fare is charged to ride the shuttle. This policy maximizes ridership by allowing anyone to board. However, to prevent excessive use by any one person, all riders must disembark after completing one circuit.

Hours of Service

Shuttle hours of service and the number of vehicles in service vary depending on the day of the week and the season. Table I-11 illustrates current schedules and vehicle hours of service over the year.

Figure I-4. Current Shuttle Route



November through June
Mon & Wed - Thu - Fri

Table I-11. Existing Shuttle Service – Schedule and Hours per Year

Route	8:00 AM	9:00	10:00	11:00	12:00 PM	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	Hours/ Day	Days/ Year
BP 1																8	137
BP 2																8	137
BP 3																0	137
BP 4																0	137
																16	137
Tuesday																	
BP 1																Hours/Day	
BP 2																8	35
BP 3																8	35
BP 4																8	9
																0	35
																24	35
Sat & Sun																	
BP 1																Hours/Day	
BP 2																8	68
BP 3 (during Daylight Savings Time in April-June)																8	19
BP 4																0	68
																24	68

8 Month Sub-Total

July through October
Mon & Wed - Thu - Fri

	8:00 AM	9:00	10:00	11:00	12:00 PM	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	Hours/Day	
BP 1																8	70
BP 2																8	70
BP 3																0	70
BP 4 (except Mondays)																5	53
																21	53
Tuesday																	
BP 1																Hours/Day	
BP 2																8	17
BP 3																8	17
BP 4																8	17
																5	17
																29	17
Sat & Sun																	
BP 1																Hours/Day	
BP 2																8	36
BP 3																8	36
BP 4																8	36
																5	36
																29	36

4 month Sub-Total

Annual Total

Source: Old Town Trolley; Tilghman Group

Ridership

Ridership averages just over 300,000 rides annually. Table I-12 summarizes ridership and available capacity by month in Fiscal Year 2005.

Table I-12. Shuttle Ridership and Capacity by Month

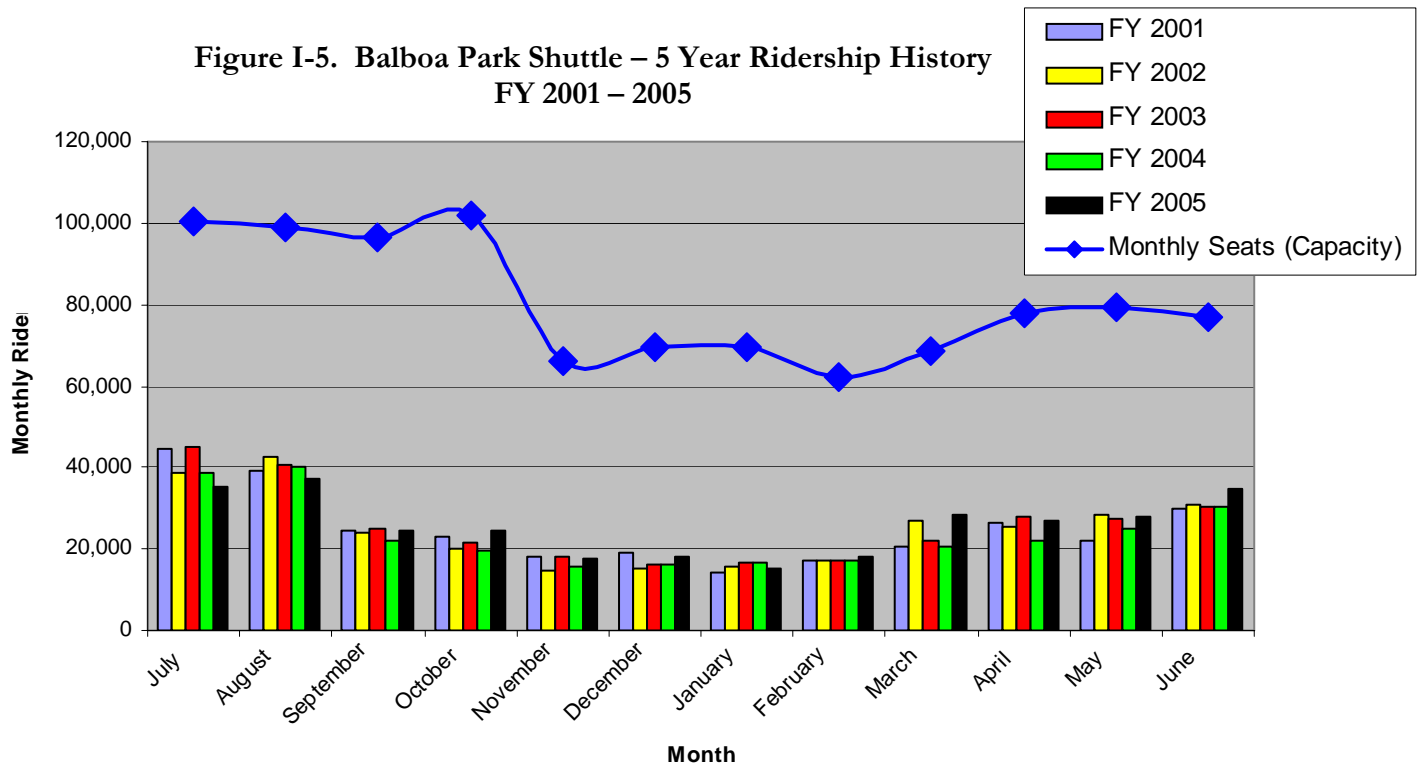
Month	Ridership FY 2005	Capacity	% Utilization
July-04	35,199	100,650	35%
August	37,211	98,700	38%
September	24,721	96,300	26%
October	24,542	101,850	24%
November	17,733	66,000	27%
December	18,141	69,600	26%
January-05	15,335	69,600	22%
February	18,081	62,400	29%
March	28,256	68,400	41%
April	27,159	78,000	35%
May	28,125	79,200	36%
June	34,953	76,800	46%
TOTAL	309,456	967,500	32%

Source: Park & Recreation Dept.; Tilghman Group

Figure I-5 shows the relationship of ridership to capacity for the last 5 years. It illustrates how the service has been tailored to meet seasonal fluctuations in ridership by adding capacity during peak months and reducing it during off-peak periods.

Ridership is recorded daily but is not recorded on an hourly basis or by stop. Based on its experience, the operator indicates that most riders board at the Plaza de Panama or at Pan American Plaza. Inspiration Point produces lower ridership while the West Mesa generates very little use. The operator also notes that most shuttle trips are empty during the first two hours of morning service (8:00 to 10:00 a.m.) and during summer evening operation (6:00 to 11:00 p.m.). Negligible morning ridership reflects the fact that employees do not need the shuttle to reach work and the fact that few visitors are present before institutions open. Evening service does attract riders from Old Globe theater performances but is typically limited to filling one vehicle on a single trip after the theater lets out. By the time the shuttle returns, few people remain to board the next trip.

Together, the first two hours of morning service and the summer evening hours amount to 1,345 vehicle hours of service, or approximately 18% of annual hours that are largely unproductive. These are hours that potentially could be reallocated to more productive periods or better utilized by employees.



Vehicle

Currently, a 30-passenger bus with an old trolley appearance is used. This is a durable vehicle based on a small transit chassis. Four vehicles are assigned to Balboa Park operations. The operator, whose main business is running narrated tours in the San Diego area, provides these vehicles. As such, the vehicles are designed for tour passengers, not shuttle riders. They feature open-air operation with rain curtains when necessary, and operate with natural gas fuel for clean running. However, they also have a high floor with multiple steps, a single door at the front, and a separate wheelchair lift near the back. Standing passengers are not allowed for insurance reasons. These features prevent rapid boarding and alighting, and prove difficult for people with young children, with strollers and for persons who do not easily manage stairs.

Operating Cost & Funding

A private operator runs the shuttle under contract with the City of San Diego. The contract presently pays \$300,000 per year for 365 days of service totaling 6,986 vehicle-hours. Table I-13 shows the estimated cost breakdown of labor and other operating expenses.

Table I-13. Shuttle Operating & Maintenance Costs

Item	Total	Cost/Hour
Amortization of Vehicles	\$ -	\$ -
Insurance, Fuel, Maintenance & Overhead	\$ 174,252	\$ 23.96
Drivers	\$ 125,748	\$ 18.00
TOTAL O&M	\$ 300,000	\$ 42.94

Two other similarly large shuttle services operate at regional universities: San Diego State University contracts for year-round shuttle service totaling 6,275 vehicle hours at a rate of \$47.50 per hour, increasing to \$48.26 in 2006; the University of California San Diego operates its own shuttle system using both 15 passenger vans and 32 passenger buses and indicates a range of operating costs from \$40 per hour for a van with a student driver to \$55 per hour for a bus with a career driver. These comparisons indicate that Balboa Park receives good value for its money.

Funding for the shuttle comes from the Transient Occupancy Tax (TOT) in the amount of \$250,000 per year and from the City's General Fund at \$50,000 per year. Increases in fuel prices may require additional funding as provided in the contract.

II. RECOMMENDED PARKING MANAGEMENT PLAN

This section describes methods to remedy parking inefficiencies. Implementing the recommendations to manage employee parking and reorganize the shuttle will increase parking availability for visitors.

Manage Employee Parking

To increase visitor parking near the institutions, it is necessary for employees to park in more distant lots. Steps to achieve this include:

- Retaining “back-of-house” parking that is not appropriate for visitor use. This makes good use of an existing resource, accommodating about 18% of employee demand and reducing shuttle demand. It also allows close-in access for those employees who need it (the institutions reported that 19 employees needed close-in parking).
- Prohibiting vehicular access to visitor parking areas before visitors arrive. Visitor lots would open at 9:00 or 9:30 depending on location, after the majority of employees arrive. At the Zoo lot, visitor parking would be allowed after 8:30 a.m. (since the zoo opens at 9:00 a.m.)
- Parking most employees at the Federal lot and at Inspiration Point (in the upper lot). These lots see little use by visitors due to their real or perceived remoteness from major destinations. Docents and volunteers arriving prior to 9:30 a.m. would park with employees in these lots. Those arriving later could park wherever they choose.
- Providing a convenient, reliable and dependable shuttle so that employees can count on getting from parking to work and back based on their schedules. Shuttles would link the Federal Lot and Inspiration Point to the Prado during the morning (7:15 – 9:45 a.m.) and afternoon (3:30 – 7:00 p.m.). During midday, the shuttle would operate from the Plaza de Panama to the Pan American Plaza (short walk to the nearby Federal lot), and would run to Inspiration Point every 30 minutes. In the event of an emergency, employees parking at Inspiration Point could request the shuttle driver to go to Inspiration Point, even if it is not time for the schedule trip. and evening, offer courtesy escort service to employees who need to return to parking.
- The City would provide shuttle service for approximately 11.5 hours per day. In the event that employees depart work after the shuttle stops, they would have the opportunity to re-park their cars closer to work. Institutions that regularly have employees work late have the opportunity to cooperate in providing courtesy escorts.
- Retaining existing accessible parking without restriction for those who need it.

Locations

Figure II-1 shows the recommended employee parking locations and Figure II-2 shows “back-of-house” employee parking. Work sites would determine which lot is most convenient to use. For example, employees working in the east portion of the Prado would park at Inspiration Point and shuttle to the Fleet Science Center. Employees working in the west portion of the Prado would park at the Federal Lot and shuttle to the Plaza de Panama. Employees in the Palisades would park in the Federal Lot and walk the short distance to work. At Spanish Village, employees would park in the back-of-house lot or in the Carousel South lot.

Figure II-1. Back-of-House Employee Parking Locations

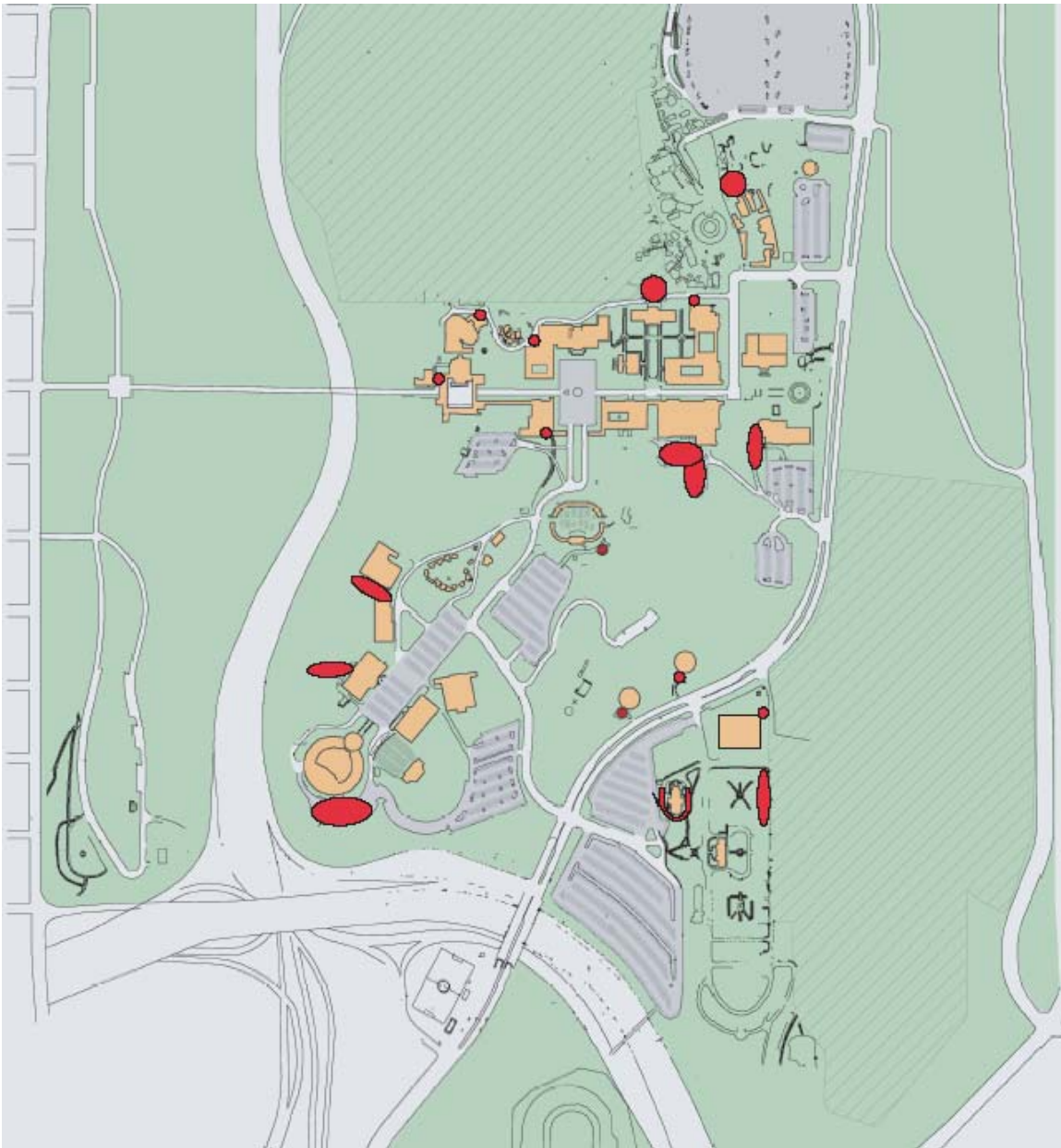
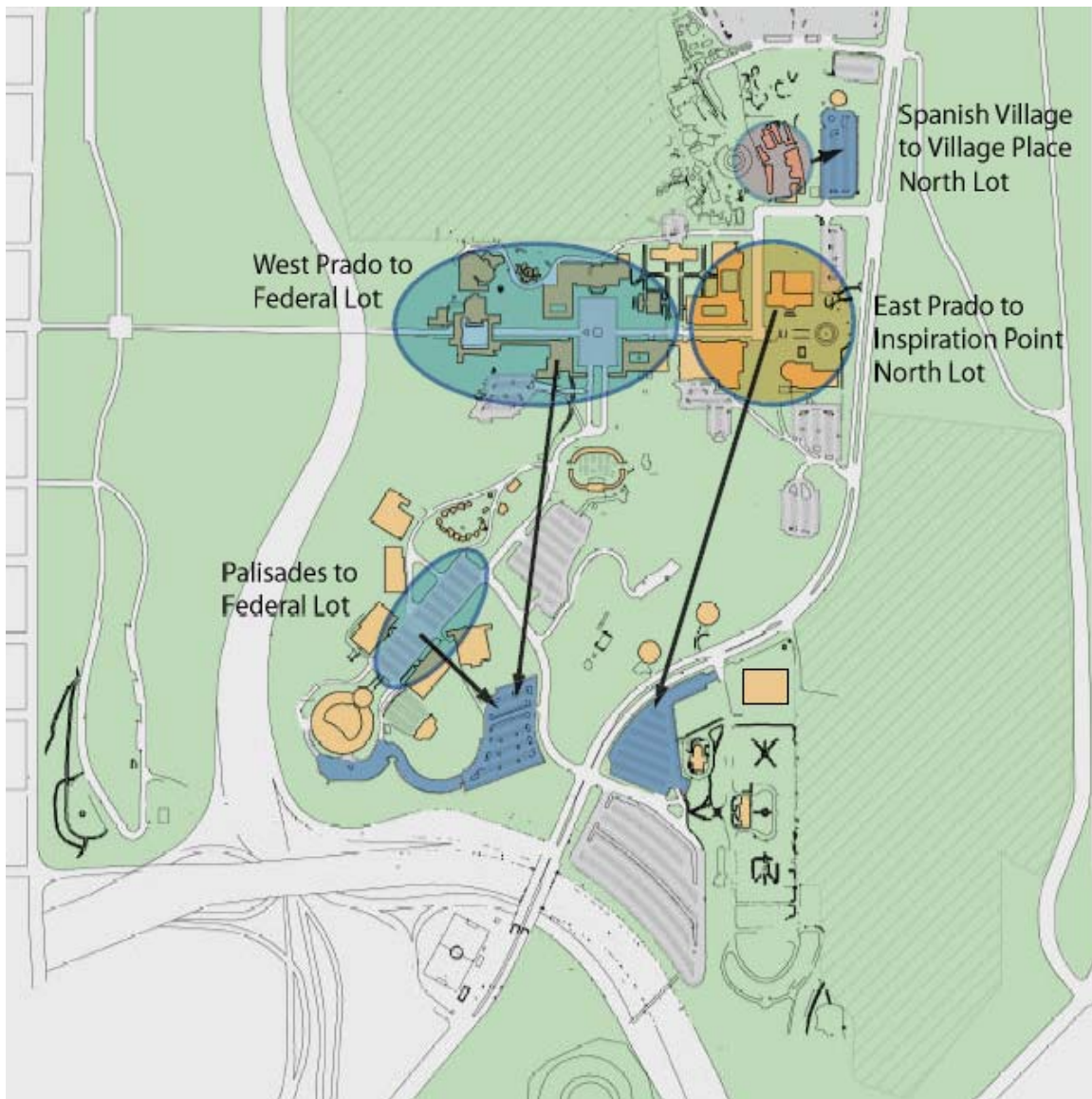


Figure II-2. Recommended Employee Parking Locations Based on Worksite



Employee Permits

To guarantee adequate parking for employees at Inspiration Point's upper lot, a permit system would be established. Employees wishing to park at Inspiration Point would be issued a permit allowing them access to the upper lot which contains 316 spaces (not counting the 31 spaces reserved for visitors adjacent to the Veterans' Memorial garden). Parking would be restricted to permit holders prior to 10:00 a.m. After that time, parking would be available to the general public. Permits would be issued and tracked by the Park & Recreation Department.

Docents and Volunteers

Docents and volunteers arriving before 9:30 a.m. would park at the Federal Lot, Inspiration Point or at back-of-house locations just as employees would, and would be eligible for a parking permit. Those arriving after 9:30 a.m., once visitor lots are open, would park wherever they choose. Based on the survey of institutions, 27% of docents and volunteers arrive before 9:30 a.m. and would be subject to parking in employee lots. The majority would continue to park where they choose.

Accessible Parking

Accessible parking for employees, docents and volunteers would be available in all employee lots and would remain in the Plaza de Panama, Pan American Plaza and along Village Place. A total of 79 accessible spaces exist in those locations. Based on Park & Recreation Department reviews, the current number of accessible spaces exceeds minimum requirements. Table II-1 shows the number of accessible parking permits currently held by employees, docents and volunteers, based on the fall 2005 survey of institutions. While the number of permits exceeds the number of accessible spaces, not all employees, docents and volunteers are present at one time.

Table II-1. Institutions' Report of Accessible Parking Needs

	Accessible Parking Permits
Employees	28
Docents	36
Volunteers	32

Source: Tilghman Group

Docents and volunteers arriving after 9:30 could park in any lot using any available accessible space.

Walking Distance & Time

Relocating employee parking will alter walking distances and time between parking and worksites. Table II-2 shows the estimated changes. The walk consists of getting from the parking space to the shuttle stop, and then from the shuttle to the worksite.

Table II-2. Changes to Employee Walking Distance

	Current Parking Locations	with Relocated Employee Parking & Shuttle							
		Federal Lot to Pl. de Panama				Inspiration Pt. To Fleet			
Institution	Mean Walk Distance (feet)	Walk to shuttle stop	Walk from Shuttle	Total Walk	Change	Walk to shuttle stop	Walk from Shuttle	Total Walk	Change
Art Institute/Mingei	735	200	585	785	50				
Globe	958	200	960	1,160	202				
House of Hospitality	610	200	195	395	(215)				
Japanese Friendship Garden	720	200	435	635	(85)				
Mus. of Man	500	200	830	1,030	530				
Mus. of Art	1,160	200	400	600	(560)				
Timken	780	200	265	465	(315)				
Fleet	150					200	70	270	120
Historical Society	715					200	830	1,030	315
Junior Theater	695					200	990	1,190	495
Model Railroad Mus.	540					200	830	1,030	490
Natural History	270					200	710	910	640
Mus. of Photographic Arts	540					200	605	805	265
Average Walk:		724				Average Walk: 873			

Table II-2a. Changes to Employee Travel Time

	Current Parking Locations	with Relocated Employee Parking & Shuttle								
		Federal Lot to Pl. de Panama					Inspiration Pt. to Fleet Lot			
Institution	Mean Walk Time (Minutes)	Walk to shuttle stop	Shuttle Wait and Ride	Walk from Shuttle	Total Time	Change	Walk to shuttle stop	Shuttle Wait and Ride	Walk from Shuttle	Total Walk Change
Art Institute/Mingei	4.1	1.1	7.0	3.3	11.4	7.3				
Old Globe	5.3	1.1	7.0	5.3	13.4	8.1				
House of Hospitality	3.4	1.1	7.0	1.1	9.2	5.8				
Japanese Friendship Garden	4.0	1.1	7.0	2.4	10.5	6.5				
Museum of Man	2.8	1.1	7.0	4.6	12.7	9.9				
Museum of Art	6.4	1.1	7.0	2.2	10.3	3.9				
Timken	4.3	1.1	7.0	1.5	9.6	5.3				
Fleet Science Center	0.8						1.1	5.0	0.4	6.5 5.7
Historical Society	4.0						1.1	5.0	4.6	10.7 6.8
Junior Theater	3.9						1.1	5.0	5.5	11.6 7.8
Model Railroad Museum	3.0						1.1	5.0	4.6	10.7 7.7
Natural History Museum	1.5						1.1	5.0	3.9	10.1 8.6
Mus. of Photographic Arts	3.0						1.1	5.0	3.4	9.5 6.5
Average Time:		9.0 6.7					Average Time: 9.8 7.2			

Source: Tilghman Group

As the table shows, the range of walking distances narrows between shortest and longest. The average total walk is equivalent to about 2.5 city blocks, and no segment exceeds 3 blocks. Total distances for employees parking at either Inspiration Point or the Federal lot are very similar.

Parking and shuttling does require additional time. The trip would take an extra 4.8 to 9.5 minutes depending on the worksite.

Security

By consolidating most employee parking in two lots and providing a shuttle linking them to the Prado, employees would be walking to commonly populated and highly visible destinations. First, they would walk to the shuttle stop located at prominent locations with good visibility and lighting where other employees would also arrive. Most shuttle trips would serve a number of employees, typically ranging from 5 to 30 persons. Once at the parking lot, employees would walk a short distance to their cars. With shuttles arriving every 5 to 6 minutes, many eyes would be focused on employee lots. Shuttle drivers also offer an additional means of communication with security officers via radio.

Additional patrols of employee parking lots by Park Rangers and by the Retired Seniors Volunteer Patrol (RSVP) would increase security during less busy daytime periods.

Security for evening hours after shuttles complete their day consists of a privately contracted security service. Escorts for employees working late are not currently provided. This is an opportunity for the institutions either individually or collectively through the Balboa Park Cultural Partnership to consider whether additional services should be provided. Options could include hiring an off-duty officer, provide escorts using an electric cart, or retaining a pedi-cab service to operate from a central location such as the Plaza de Panama to take employees back to their cars. Institutions where employees routinely work late would be best served by developing their own procedures to address individual security concerns.

Additionally, emergency call-boxes could be placed in the Federal lot, at Inspiration Point and in other lots as necessary. Calls made from call-boxes would go directly to the San Diego Police Department which would dispatch depending on the time of day either a Park Ranger or a police officer. Although the prevalence of personal cell-phones may in time make call-boxes unnecessary, the boxes can still provide useful communication for persons without cell phones or with mal-functioning phones.

Protect Convenient Visitor Parking

With employees parking at more distant locations, visitors would have greater access to close-in parking. Yet active management will be required to assure that visitor parking will be available for visitors.

Locations

Figure II-3 shows the locations of weekday visitor parking. On weekends, the Federal lot would also be available to visitors since it is not needed for employees on those days. Table II-3 summarizes that quantity of visitor parking.

Methods to Regulate Visitor Lots

The key to preserving convenient parking for visitors is to ensure that employees have designated parking and do not park in visitor lots. Recommended methods to achieve this include:

1. Providing adequate parking for employees at Inspiration Point (the upper lot) and at the Federal lot.
2. Restricting the hours of access during the morning to prevent employees from using visitor lots (93% of employees arrive by 9:30). Allow parking in most visitor lots after 9:30 a.m. (prior to institution opening times of 10:00 a.m.). For institutions opening at 9:30 (such as the Fleet Science Center), allow parking in adjacent lots at 9:00 a.m. At the Zoo, allow parking after 8:30 a.m. in the southern half of the lot (this reduces the potential for Prado area employees to use the Zoo lot rather than Inspiration Point of whom 78% arrive before 8:30 a.m.). Signs posted at lot entrances and within the lot would indicate legal parking hours.
3. Allowing street parking on Village Place at any hour but with time limits (see discussion of short-term parking below). Early morning visitors who use the Central Mesa portion of the park for exercise or relaxation would have a convenient parking location.
4. Allowing street parking on Park Boulevard and Presidents' Way after 9:00 a.m. (as already occurs on portions of Park Blvd.). This discourages commuters from using these locations as free remote parking for downtown.

Table II-3. Visitor Parking

Lots	Total
Alcazar Garden	118
Carousel Lot (North)	103
Carousel Lot (South)	208
Casa de Balboa	96
Centro Cultural de la Raza	10
Federal Building, West	103
Federal Building	416
Gold Gulch	44
Palisades Parking Lot	302
Pepper Grove, North	176
Pepper Grove, South	118
Plaza de Panama	75
Recital Hall	2
Spreckels Organ Pavillion	367
Veterans' Museum	20
Village Place, South	99
World Beat Center	5
Sub-Total	2,242
Streets	
Old Globe Way	4
Pan American Road, West	2
Park Blvd.	225
Presidents Way	25
Village Place	72
Sub-Total	328
Visitor Total	2,570

Short-Term Parking

Conveniently located spaces to serve visitors who wish to stay only a short period would best be provided on streets. Drivers are accustomed to finding short-term parking on the street, and a street location reduces the volume of traffic through parking lots.

Recommended locations for short-term parking are:

1. Village Place where a 2-hour limit would facilitate convenient short-term parking at the east end of the Prado with easy street access. A uniform limit eliminates the need for posting multiple shorter term limits such as the 15 and 20 minute limits now that prove difficult to monitor.
2. Plaza de Panama where a 2-hour limit would serve the west end of the Prado. Currently, the Plaza has some 3-hour spaces that allow too much potential for abuse by all-day parkers and does not offer sufficient turnover for this prime location.
3. Pan American Plaza at the northern edge where one row of parking would be posted for 2-hours to serve early morning and other short-stay visitors.

Limits are unnecessary in visitor lots due to normal turnover and do not fit the profile of visitors' parking needs. While visitors' average length of stay is about 3.25 hours, 25% stay less than 2 hours, 25% stay 3 hours, 25% stay 4.5 hours while the final 25% stay 6.5 hours. Given these patterns, imposing time limits would be unlikely to encourage much greater turnover and may instead risk diminishing attendance at institutions.

Accessible Parking

Accessible parking locations would remain unchanged. Use of accessible spaces would not be time limited (except for late night hours when lots are closed).

Walking Distance and Time

Visitors' walking distance and time to reach their destinations would be reduced by the parking management plan. It is anticipated that the average walking distance would be cut in half to about 700 feet. This would save nearly 4 minutes of walking time for most visitors each way from parking to destination, and from destination back to parking.

Additionally, visitors would save time in finding a parking space with better wayfinding (described in Section IV – Wayfinding) and with relocated employee parking. Given the amount of hunting and length of searching that occurs now, it is estimated that visitors would save from 3 to 5 minutes in finding a parking space.

Overall, parking management would save visitors 12 to 15 minutes in access time. That can be a significant savings allowing visitors more time to enjoy the attractions, to find a souvenir or refreshment, and to relax. Parking management also enhances the perception that parking is available.

Security

Just as employee parking is consolidated under this plan, so is visitor parking. Visitor vehicles would not be so dispersed among the many parking lots, and turnover rates within visitor lots would be higher than they are now. This means that more people would be present over more hours of the day in each lot. Ranger and RSVP patrols also increase security.

Enforcement

Active parking management requires enforcement to keep the system working properly. By keeping the plan as simple as possible, enforcement needs remain modest.

Methods

Enforcement responsibilities would include:

1. Checking employee permits in the Inspiration Point upper lot. One or two morning checks would be adequate. Park Rangers could do this on a random basis. Park-issued parking permits become the Park's responsibility to enforce.
2. Monitoring compliance with short-term parking limits on Village Place, in the Plaza de Panama and in Pan American Plaza. With a 2-hour limit, patrols need to occur frequently across the day. This would be best handled by the City of San Diego's Parking Management Division which already has the authority to do so and has appropriate equipment and administrative resources to issue and track citations.
3. Monitoring use of visitor parking lots prior to opening hours. This should also be a function of the City's Parking Management division. However, verifying temporary permits and/or use of approved temporary parking for vehicles during early morning meetings or other events at institutions is a Park responsibility since it would be the issuing agency for the permits and cordon approval. Park Rangers or designated security personnel would have this responsibility.
4. Coordination between park administration and Parking Management to establish parking time-limits, and to monitor violation patterns so that effective policy changes can be made as needed.

Staffing Requirements

Verification of permits in employee lots can be accomplished with existing rangers. Enforcement of short-term parking areas and visitor parking lots prior to 9:30 a.m. would require use of Parking Management staff. Existing hours of enforcement, from 7:00 a.m. to 6:00 p.m., should be retained. Parking patrols within the park are integrated with those in adjacent neighborhoods to maximize staff efficiency. More aggressive enforcement may require additional staff and would need to be discussed with Parking Management.

Efficiencies

A variety of enhancements to existing facilities can improve parking efficiency. Such enhancements include:

- Re-striping selected areas to gain spaces
- Expanding parking within existing lots where possible
- Re-organizing the Plaza de Panama to accommodate shuttles and valet parking with fewer conflicts
- Managing dumpsters
- Motorcycle parking

Re-striping

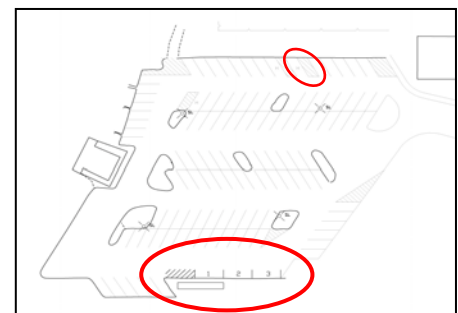
Throughout the park, parking lots are well organized and space efficient. The width of parking bays (that is, the combined width of the driving aisle and its adjacent stalls) generally falls between 58 and 62 feet, ideal for 90 degree parking with two-way traffic. Stall dimensions are also appropriate at 16 to 18 feet long and 8.25 to 9.0 feet wide. While many cities have promoted use of narrower stalls for compact cars in order to gain more spaces within the same lot area, narrower spaces do not serve visitors well. Narrow spaces make opening doors on both sides of the car difficult, and they force larger vehicles to encroach on adjacent stalls, which may actually reduce the number of vehicles able to park.

Opportunities for re-striping in Balboa Park should focus on gaining spaces in areas where extra pavement exists. Two specific opportunities are:

- Inspiration Point – approximately 9 extra spaces could be gained along the north edge of the middle lot.



- Alcazar lot – 2 to 3 stalls could be marked parallel to the curb on the lot's south side. This requires screening or relocation of dumpsters now located at the curb. One additional stall could be gained by re-striping an accessible parking space to share the adjacent access aisle rather than duplicating it.



Expansion within Existing Lots

As previously noted in the Central Mesa Precise Plan, the lot south of the Carousel could increase parking within existing curbs. Implementation of the Precise Plan recommendation would provide from 27 to 44 additional spaces. This would provide valuable extra parking in a heavily used area prior to implementation of the Park Boulevard Promenade Plan Amendments.

Plaza de Panama Re-organization

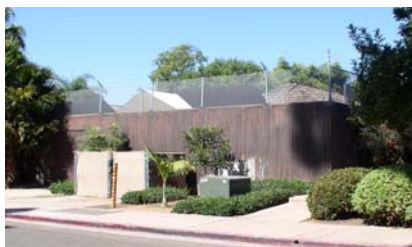
Conflicts exist between the shuttle stop, valet station, through traffic, parking and pedestrians, all of which compete for space in the same small section of the plaza. As a result, the Plaza easily confuses drivers and pedestrians as to proper paths of travel and who has the right-of-way, and traffic backs up. While long-term objectives include converting the Plaza to a more pedestrian condition, as articulated in the Master Plan and Precise Plan, more immediate improvements can be made in the interim:

- Separate the valet parking station from the shuttle boarding area. This would offer additional stacking room that would reduce, if not eliminate, traffic back-ups.
- Remove parking from the central area south of the fountain. These ten spaces prove too awkward for circulation.
- Replace the parking area south of the fountain with landscaping. As an interim step, this would better define pedestrian and vehicle paths, reduce visual clutter, and simplify circulation. This recommendation does not conflict with the Precise Plan recommendation for reducing vehicular use in the Plaza and for providing new pavement.

While a variety of concepts for re-configuring the Plaza were examined, additional investigation is needed to determine which scheme works best for the interests of the Park and the affected institutions.

Managing Dumpsters

Garbage dumpsters located in the Alcazar lot and the Federal lot lack a dedicated pad and screening. As such, they occupy parking spaces or areas that could be used for parking and present an unattractive face to users of the lots. To improve efficient use of existing parking, such dumpsters should be placed on pads and screened.



Example of well screened dumpster near Village Place



Free-range dumpsters in Alcazar lot

Motorcycle Parking

Motorcycles occasionally park in car spaces, most frequently at Inspiration Point. This makes poor use of parking and indicates that dedicated motorcycle parking should be provided at Inspiration Point. Motorcycle parking now provided in the Plaza de Panama, Alcazar lot and Pan American Plaza should be retained.



Service and Delivery Access

Service and deliveries would remain unchanged under the parking management action plan. Access to lots where dumpsters are located is not affected, and back-of-house access is retained.

Valet Parking

With re-organization of the Plaza de Panama, the valet parking station would gain greater stacking room for the busiest periods (only 3 vehicles can be handled at one time now). Too little stacking capacity causes current conflicts with shuttles and general traffic.

Vehicle storage in the Alcazar lot remains appropriate in the evenings. Valet parking increases parking efficiency by nearly doubling the number of cars that can be parked in a given area.

Special Events

A wide variety of special events take place in the park throughout the year. Some involve closure of individual parking lots, while the largest events involve closure of lots in the core area or complete closure of all lots. With the parking management plan, lots are designated as visitor lots or employee lots. Guidelines for managing each during special events include:

Visitor Lot Closures – For events that involve closing a visitor parking lot (or 100 or more visitor spaces) at times when such displacement could not be readily accommodated in other nearby lots, these actions should be required:

- ❑ Designate additional visitor parking at Inspiration Point (on evenings and weekends) using temporary signs.
- ❑ Provide shuttle service from Inspiration Point to the core areas during the event. Additional shuttle vehicle-hours, if required, should be charged to the event.

Employee Lot Closures – Events requiring closure of the Federal Lot should be limited in the future. When they are approved for weekdays and would displace employee parking, they should be required to provide alternate employee or event parking with shuttle service as a cost of the event. In the summer, some of this parking may be accomplished at Inspiration Point (when City College use does not occur), or at City College depending on negotiation.

Events that would close the Federal Lot on weekends and displace visitor parking should accommodate visitors elsewhere with shuttle service. Any additional shuttle service would be provided by the event.

Extended Hours of Operation – Some events require longer hours of operation beginning earlier in the morning than institutions normally open. For such events, the opening times for visitor lots could be adjusted to meet the needs of the event. Requests for earlier parking hours would need to be incorporated in the special event application so that appropriate management actions can be determined well in advance.

Providing Extra Parking – When large events or exhibitions require additional parking, opportunities to expand parking depend on the season, but include:

- Use of Inspiration Point during the summer. This may require the event to provide additional shuttle service;
- Additional valet parking in selected areas. By stacking, valet parking can often double the number of cars parked in a given area;
- Using other areas of the park such as the Arizona landfill for temporary parking. These more remote locations would require the event to arrange additional shuttle service.

III. SHUTTLE PLAN

Shuttle service plays a fundamental role in the parking management action plan. It enables the relocation of employee parking to peripheral lots by ferrying employees between parking and work. That in turn improves visitor parking availability closer to the Prado and Palisades. Additionally, a shorter mid-day shuttle route focused on the core areas yields higher frequency service that increases visitor mobility.

The following recommendations were developed to make the most efficient use of existing vehicles, facilities and financial resources. The plan also strongly recommends acquiring new shuttle vehicles to improve performance. Accordingly, schedules, ridership and costs are compared for the existing vehicle fleet and for a new vehicle fleet.

Mission

The shuttle's mission continues to be reduction of vehicle traffic in the Central Mesa. It will accomplish that by improving visitor mobility between major attractions, and maximizing efficient use of existing parking areas for both park visitors and employees.

Routes

To fulfill the shuttle's mission, this plan recommends modifications to existing routes and re-allocation of hours of service. Routes will vary by time of day and day of the week based on actual demand to serve both employees and visitors.

Figures III-1 and III-2 show weekday routes for the early morning and late afternoon hours. These routes will serve employee parking lots during the hours when most employees arrive and depart. Employees working in the Palisades area would have a short walk from the Federal lot and would not need to be shuttled. Two routes are recommended:

- A route serving employees of the west portion of the Prado who park at the Federal lot.
- A route serving employees of the east portion of the Prado who park at Inspiration Point.

Each route offers similar travel distance and travel time, making a round trip in 5 to 7 minutes.

On weekends when employees park at Inspiration Point exclusively, the shuttle would run to that parking area. Figure III-3 shows the proposed weekend employee shuttle route.

During midday from approximately 9:45 a.m. to 3:30 p.m., employee shuttle routes and schedules would change. The shuttle would not run directly to the Federal lot but would provide rides to the Pan American Plaza, a short walk from the parking lot. The shuttle would go to Inspiration Point every 30 minutes at the top and bottom of the hour. This allows employees to return to their cars before the afternoon employee shuttles start.

Figure III-1. Employee Shuttle Route: West Prado to Federal Lot



Figure III-2. Employee Shuttle Route: East Prado to Inspiration Point



Figure III-3. Weekend Employee Shuttle Route

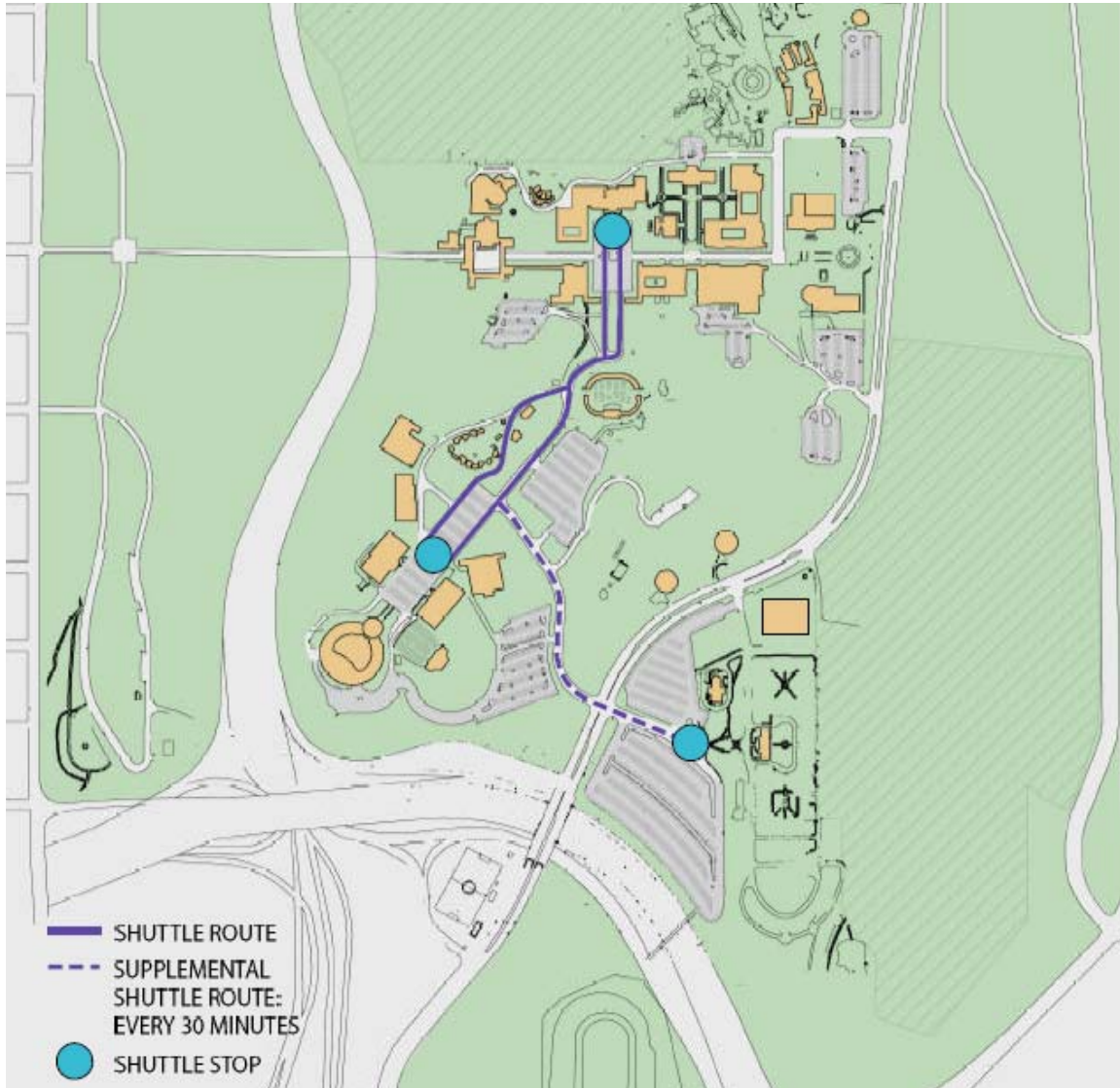


Figure III-4 shows the recommended visitor shuttle route. It would operate midday between the Plaza de Panama and Pan American Plaza, shorter than the current route. It is recommended that the current segment to Inspiration Point operate every 30 minutes and that the segment to the West Mesa be eliminated. There are two reasons for shortening the route:

- Both segments are the least productive for ridership since most riders are in the core area. Consequently, service on these segments does not support the shuttle's mission of reducing traffic in the core area.
- The trip to Inspiration Point and to the West Mesa takes extra time and reduces the frequency of service. A second vehicle is required to maintain a minimum 10 minute frequency. This is unproductive and a poor use of available funds.

With a shortened route, a single vehicle can provide 5-minute frequency during the midday. The twice hourly service to Inspiration Point will allow employees to return to their cars and will maintain connections with nearby institutions, while only minimally reducing frequency in the core area.

Figure III-4. Visitor Shuttle Route Weekdays and Weekends



Hours of Service

With the shortened shuttle routes, existing hours of service can be re-allocated to meet both employee and visitor needs. Table III-2 (on the following page) shows the recommended reallocation of hours. It assumes continued use of the existing shuttle vehicle.

A new, higher capacity vehicle is recommended (see Performance Requirements, below). To illustrate its benefits, Table III-3 shows how hours of service could be minimized with the extra capacity. This represents a minimum operating scenario to meet basic capacity needs.

Ridership

Table III-1 shows estimated ridership for two scenarios: one using the current vehicle; and a second using a new, higher capacity vehicle.

Table III-1. Estimated Shuttle Ridership

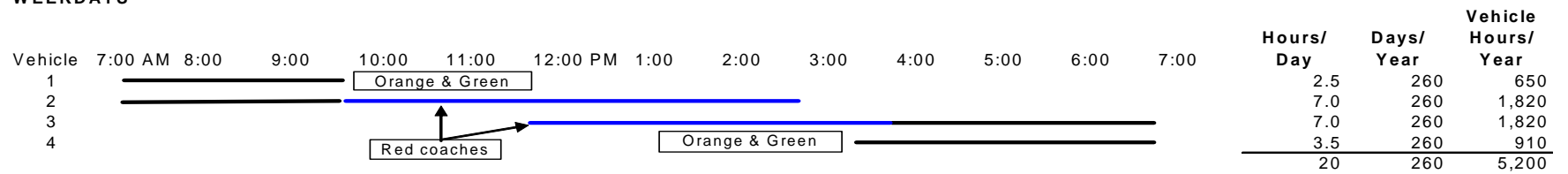
	Existing Vehicle (30 Passengers)			New Vehicle (45 Passengers)		
	Weekday	Weekend	Annual TOTAL	Weekday	Weekend	Annual TOTAL
Employees						
Employee Rides/Day	830	350		830	350	
Days/Year	260	105		260	105	
Rides/Year	215,800	36,750	252,550	215,800	36,750	252,550
Visitors						
Hours/Day	6	6		5	5	
Seats/Hour	720	720		1,080	1,080	
Est. Utilization	20%	25%		18%	22%	
Rides/Day	864	1,080		972	1,188	
Days/Year	260	105		260	105	
Rides/Year	224,640	113,400	338,040	252,720	124,740	377,460
		TOTAL	590,590		TOTAL	630,010

Source: Tilghman Group

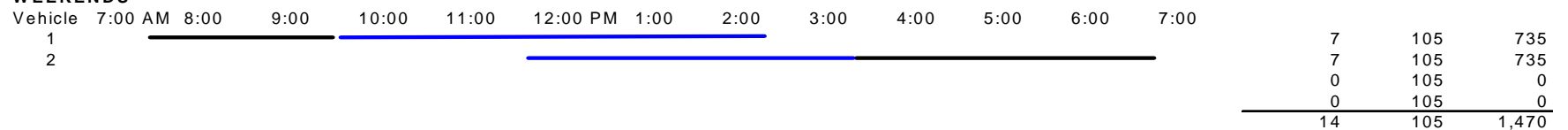
Ridership would nearly double the current level of 309,000 annual riders with the addition of employees. Even with employees riding, visitors would continue to account for the majority of riders. A larger vehicle would increase the shuttle's ability to accommodate visitors and meet peaks in employee demand.

Table III-2. Recommended Hours of Service Using Existing Vehicle

**Full Year
WEEKDAYS**



WEEKENDS



Annual Total 365 6,670

Current Total 6,986

Comparison to Current: 95.5%

Source: Tilghman Group

Table III-3. Minimum Hour of Service Using New Vehicle

Full Year

Weekday

	7:00 AM	8:00	9:00	10:00	11:00	12:00 PM	1:00	2:00	3:00	4:00	5:00	6:00	7:00	Hours/ Day	Days/ Year	Vehicle Hours/ Year
Vehicle 1	_____									_____				5.5	260	1,430
2	_____									_____				5.5	260	1,430
3				_____										5.5	260	1,430
														16.5	260	4,290

Weekend

	7:00 AM	8:00	9:00	10:00	11:00	12:00 PM	1:00	2:00	3:00	4:00	5:00	6:00	7:00	Hours/ Day	Days/ Year	Vehicle Hours/ Year
4	_____									_____				6	105	630
3				_____										5.5	105	578
														0	105	0
														0	105	0
														11.5	105	1,208

Routes	Headway (minutes)
1 Federal Lot to Plaza de Panama	6
2 Inspiration Pt to East Prado	5
3 Pan American Plaza to Plaza de Panama	6
4 Inspiration Pt to Plaza de Panama	7

Annual Total 365 5,498

Current Total 6,986

Comparison to Current: 78.7%

Source: Tilghman Group

Performance Requirements for a New Vehicle

To fulfill its mission well, a new shuttle vehicle needs to:

- Provide capacity for 45 passengers. The peak load for employee trips is estimated to be 42 persons. A combination of seated and standing passengers is appropriate given the short 2 – 3 minute one-way trips.
- Have a low floor to provide universal access for all passengers.
- Offer easier wheelchair access (which is greatly aided with a low floor).
- Have two wide doors to allow quick loading and unloading.
- Use a clean fuel and run quietly.
- Allow open-air operation befitting a park in a warm, dry climate. Operable windows or rain curtains would be deployed when needed.
- Employ courteous, friendly drivers.

A new vehicle is needed to meet these requirements. The current vehicle, designed for tours rather than shuttles, meets the clean fuel and open-air requirements, and excels in having courteous drivers but falls short of providing easy access and adequate capacity. A new vehicle will significantly improve performance and reliability of service for employees and visitors.

Management Actions to Support Continued Use of Existing Vehicle

While it is possible to begin the modified shuttle service with the existing vehicle, it will have too little capacity for some trips during approximately one-half hour in the morning and in the afternoon to meet employee demand. During those periods, some employees may have to wait for the next trip (in 5-7 minutes) or walk. Actions to address this deficiency include:

- ❑ Slightly altering employee work schedules at larger institutions. For example, the Museum of Art, Museum of Man and Mingei have approximately 98 employees arriving between 8:00 a.m. and 8:30 a.m., while the Old Globe Theater has about 94 arriving between 8:30 a.m. and 9:00 a.m. If half of the museums' employees could arrive just 15 minutes earlier, and half of the theater's employees could arrive just 15 minutes later, the existing vehicle would have adequate capacity.
- ❑ In the event that work schedules cannot be sufficiently shifted, additional capacity should be provided with a small vehicle similar to a golf-cart with seating for up to 12 people, until experience is gained with riders' patterns in using the shuttle. This applies to the Federal lot employee shuttle route.

Two of the existing three vehicles serving the park are equipped with wheelchair lifts. Not originally designed for wheelchair access, these vehicles were retrofitted with lifts which operate slowly, requiring 3 – 4 minutes each to load and to unload. In the event that the lift were used, the shuttle would miss a round trip. To improve accessibility and save time for all riders, the small cart, with an accessible design, would provide a suitable alternative.

Facility Needs

Modest improvements in shuttle stops will be needed to serve greater numbers of riders. These improvements include:

- A shelter at the Federal lot and at the back of the Fleet Science Center to provide protection from the weather. At Inspiration Point, the existing shelter would be used.
- Waiting areas at employee lots. A paved surface under and adjacent to the shelter at the Federal lot is needed. The shuttle stop would be located adjacent to the main driving aisle (east side) and would require conversion of approximately 5 parking spaces to a waiting area with shelter.
- New and improved signs. Employee stops need to be identified, and improved signs are needed for visitor stops.
- Minor curb changes to facilitate shuttle maneuvers at the Pepper Grove North lot. For example, the western exit lane needs a greater radius.

Special Events

As noted in the parking section, events requiring lot or street closures may need to provide extra shuttle service. When extra capacity or additional hours of service are required, events should contract for such services.

Similarly, requests for service outside of regular hours such as late evening shuttles, should be treated as an added responsibility of the event.

Operating Costs

Table III-4 compares operating costs for the existing vehicles using the current budget and new vehicles for the minimum hours of operation.

Table III-4. Future Shuttle Operating Costs

	Using Existing Vehicles			Using New Vehicles		
Item	Amortization Cost/Vehicle	Total	Cost/ Hour	Amortization Cost/Vehicle	Total	Cost/ Hour
Vehicles	\$ -	\$ -	\$ -	\$ 44,784	\$179,135	\$ 29.26
Insurance, Fuel, Maint. & Overhead		\$174,252	\$24.94		\$122,450	\$ 20.00
Drivers		\$125,748	\$18.00		\$110,205	\$ 18.00
		\$300,000	\$42.94		\$411,790	\$ 67.26
Contingency	0%	\$ -	\$ -	10%	\$ 41,180	\$ 3.36
	TOTAL O&M	\$300,000	\$42.94		\$452,970	\$ 82.39
	Cost per Rider \$ 0.45			\$ 0.72		
				Current Cost \$300,000		
				Difference per Year \$152,970		
				Vehicle Capital Costs		
				Cost (per vehicle) \$ 250,000		
				Term (years) 7		
				Interest 6%		
				Amortization (annual) \$44,784		

Source: Tilghman Group

The recommended shuttle schedule holds total vehicle hours nearly constant with current hours. Drivers' shifts have been structured in conjunction with the current operator's other services to provide full-time work for its employees. Changing to more short or part-time shifts could result in increased labor and training costs.

The costs above assume continuation of a fully contracted operation to a private operator. Given the small number of vehicles and the high level of use, contracting out the entire service gives the City the best value for its money.

Other options include:

- City owned and operated shuttles. This requires the City to purchase the vehicles, which it does not now own, and requires the City to hire and train drivers. It also requires the City to provide vehicle storage, maintenance and repair facilities. While it may be possible for existing maintenance facilities to take on the shuttle vehicles, mechanics would need to be trained on the vehicle's specific systems and spare parts would need to be acquired. For only four vehicles, this would be the most expensive approach to operating the shuttle.
- City owned vehicles but contracted operation. The City would be responsible for acquiring vehicles and would then contract out some or all of the operation. This represents a middle ground in terms of cost. However, there is little inherent benefit for the City in owning the vehicles since, for example, it cannot readily deploy idle vehicles in off-peak periods to generate extra revenue.

Funding

Existing shuttle funds come from the Transient Occupancy Tax (TOT), amounting to \$250,000 per year, and the general fund at \$50,000 per year. This amount provides for approximately 6,986 vehicle hours of service annually. Increases in fuel costs, based on contractual provisions, may require additional funds.

Additional funding of approximately \$152,000 per year would be needed to support *minimum* operation of a new fleet of vehicles more appropriately designed for shuttle service. Signage and facility improvements would need extra capital funding.

At this point, sources of funds have been generally identified. Pending detailed review of the plan's recommendations, more specific sources of funds will be determined. In general, sources include grants, sponsorships, donations and partnerships.

Grants –

Grants provide capital funds only, not operating funds. Federal grants are provided for transit capital expenditures to improve air quality, to increase mobility, and to assist agencies with fleet replacement. However, these grants apply to regional or metropolitan services and cannot be applied to purposes such as an intra-park shuttle.

State and local grants may be available through the political process.

Sponsorships –

Sponsors have increasingly provided funds for specific transit services though they usually do so in exchange for advertising on vehicles (the Las Vegas monorail is an example where the entire train is painted to promote the sponsor) or for attracting increased traffic to their enterprise for their benefit. Balboa Park to date has prohibited advertising on its shuttle vehicles. This policy does not rule out sponsorships but may limit the perceived value to a potential sponsor.

Donations –

Donations are more common for special or one-time events than for on-going support of shuttles. In any case, donations require a high level of administrative support to secure, collect and renew.

Partnerships –

Typically a second party contributes funds to the operating agency to contract for new or additional service that would otherwise be unavailable. Examples include university campuses that contribute funds (often collected from parking and student fees) to provide direct routes to campus or to provide special evening service, business parks that pay to provide connections to regional rail stations, and business districts that contribute to district shuttle services. Balboa Park has an opportunity to create a partnership between the City and the cultural institutions to support improved shuttle service.

IV. WAYFINDING

Implementation of this parking management action plan means that visitors will need positive direction to reach visitor parking lots. This will require new signs as well as changes to existing signs. The parking management action plan recommends specific locations and messages for signs consistent with the broad design guidelines adopted in the Balboa Park Master Plan and Central Mesa Precise Plan, and it also recommends minor modifications to the design guidelines to improve their effectiveness for wayfinding.

Principles

Wayfinding includes a variety of different signs:

- Directional signs for cars. Signs for cars differ from signs for pedestrians in terms of legibility. Distinguishing characteristics include:
 - Sign size
 - Font size
 - Font style
 - Line spacing
 - Graphic layout
- Directional signs for pedestrians. These provide more detailed information useful to pedestrians, and typically use smaller fonts.
- Place names. Creating a consistent identity and design helps visitors to understand which signs are about the park.
- Regulations. Design of regulatory signs is constrained by standards; coordination with affected agencies is needed to achieve a more appropriate standard within the park.

Existing Identity Signage

Existing identity signage should be modified to include the address of the institution. Knowing the address will assist visitors, deliveries and emergency responders. This change will not require new signs, and can be executed with a simple on-site application of appropriate lettering (as described below).

Directional Signage

This signage plan specifically focuses on directing visitors' vehicles to appropriate parking. It differs in this way from previous sign plans that combined both vehicular and pedestrian directions on single signs.

How much information?

Each sign should include as few lines of text as possible; three or less is optimal. The more lines of information a sign has, the less useful it is.

What information?

In the interest of keeping signs simple, the recommended signs concentrate on major visitor destinations only. We have used collective terms, such as 'museums/theaters', instead of listing each attraction individually in order to reduce the amount of information on each sign.

A destination accessible only by foot is generally not included on a directional sign. Two exceptions have been made for existing signs directing pedestrians to destinations on the Prado to achieve consistency with new sign lettering characteristics.

The Precise Plan signage plan notes that institutions shall not be named individually on directional signs, with the exception of the San Diego Zoo, which will be noted as 'Zoo'. We have, however, named the Starlight Bowl. This is a consequence of it being the last theater in the Globe/Organ Pavilion/Starlight Bowl 'Theaters' grouping (when entering at Laurel Street), and having an identity sign that vehicles do not naturally circulate by. Traveling in the opposite direction, the Globe is the last theater, but since it is not directly accessible by vehicle and cars *do* circulate directly by it, we recommend an identity sign for it on Laurel Street instead of a specific mention on directional signage.

The Parks department has expressed a strong desire to name the Park Administration Building on directional signage, in order to assist people who need to go to this stand-alone location to apply for special event permits.

Where to locate signs

Sign location depends on speed of travel. For faster roads such as Park Boulevard, signs should be approximately 200' before the intersection or expected turn. For other roads, 75'-100' from the intersection is sufficient. This means that in some cases, existing sign poles can be re-used to attach new signs. In other cases, the pole should be demolished or moved, so that the sign can be located at the appropriate distance. The locations shown on the accompanying map are schematic in nature; precise locations should be determined in the field.

Ancillary Signage

This plan aims to reduce signage clutter in the park. There are a number of signs representing programs that may merit re-evaluation. In particular "Tune Radio" signs and "Scenic Drive" signs fall in to this category. We observed only two 'Scenic Drive' signs, and two or three radio signs—these should be reviewed for relevancy to active programs.

Design Guidelines

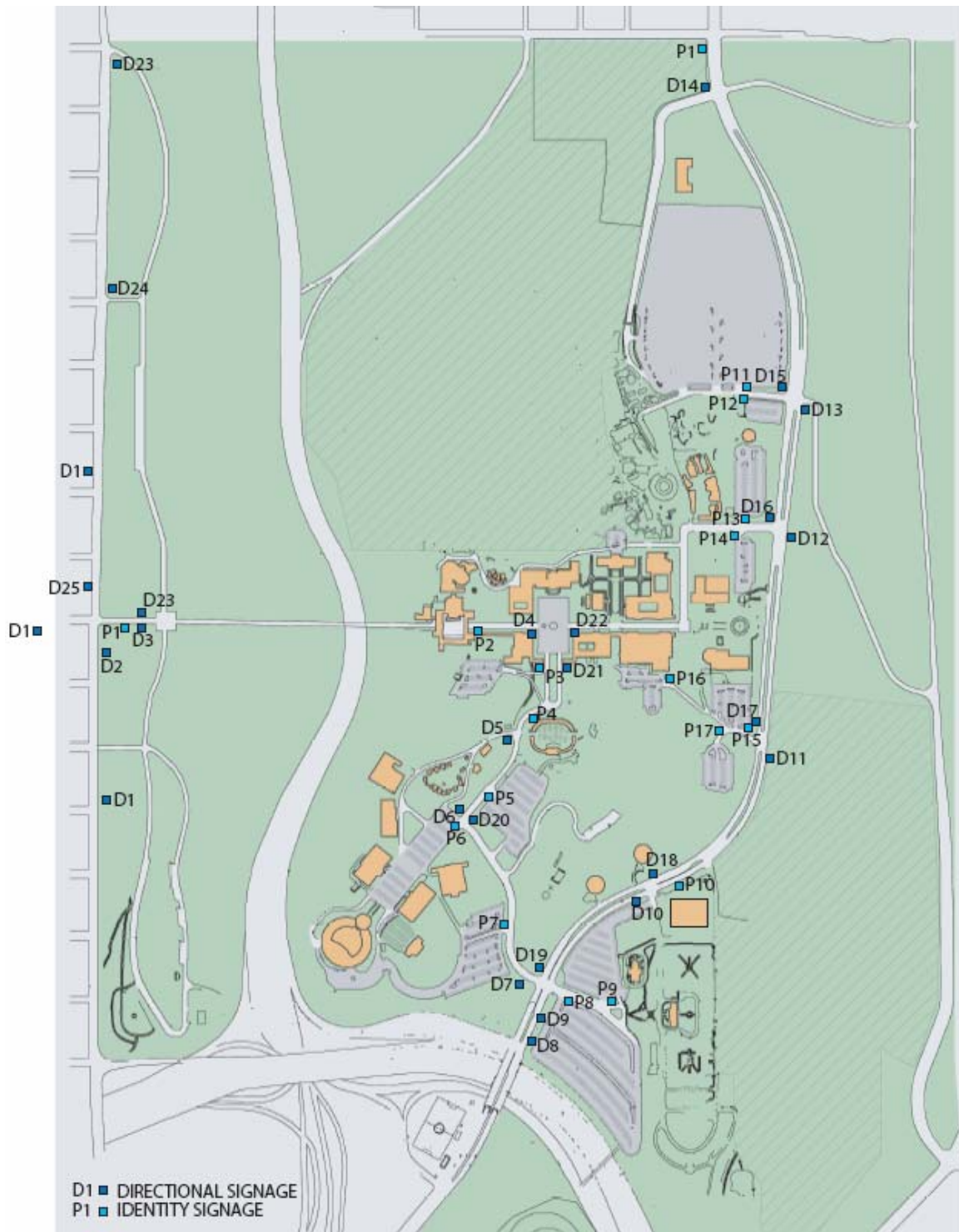
The sign sizes, shapes and colors specified in the adopted design guidelines provide a good basis for refining the wayfinding system. Minor changes are recommended to improve legibility including:

- Font size (see Figures IV-2 and IV-3)
- Font style
- Line spacing
- Graphic layout

Recommended Wayfinding Plan

Figure IV-1 shows the locations for wayfinding signs. It indicates the type of sign (directional or identity sign) and a number for each one. Illustrations in Figure IV-2 and IV-4 are keyed to that numbering in order to show how each sign would look.

Figure IV-1. Wayfinding Signs – Key Map



Directional Signs

Recommended dimensions, fonts and layouts are illustrated below. An area is provided for the Balboa Park logo that would accommodate either the current or the newly proposed logo.

Figure IV-2. Directional Sign Design Guide



Figure IV-3. Directional Signs



Sign D1: 6th at Thom St



Sign D2: 6th at Laurel St



Sign D3: Laurel St at Balboa Dr



Sign D4: Plaza de Panama

Figure IV-3. Directional Signs (continued)



Sign D5: Pan American RD at split



Sign D6: Palisades



Sign D7: President's Way a Park Blvd



Sign D8: Park Blvd at south entry

Figure IV-3. Directional Signs (continued)



Sign D9: Park Blvd at south entry



Sign D10: Park Blvd at Veteran's Museum



Sign D11: Park Blvd. at Naval Hospital



Sign D12: Park Blvd at Desert Garden

Figure IV-3. Directional Signs (continued)



Sign D13: Park Blvd at Zoo Place



Sign D14: Park Blvd at north entry



Sign D15: Park Blvd. at Zoo Lot



Sign D16: Park Blvd at Village Place lot

Figure IV-3. Directional Signs (continued)



Sign D17: Park Blvd at Pepper Grove North lot



Sign D18: Park Blvd at Centro Cultural de la Raza



Sign D19: Park Blvd. at President's Way



Sign D20: President's Way at Pan American Rd

Figure IV-3. Directional Signs (continued)



Sign D21



Sign D22



Sign D23



Sign D24

Figure IV-3. Directional Signs (continued)



Sign D25

Identity Signs

Identity signs use place names to identify specific parking lots and buildings. They need to be clearly visible to both drivers and pedestrians.

Figure IV-4. Identity Sign Design Guide



Figure IV-5. Identity Signs



Sign P1: Balboa Park



Sign P2: Old Globe



Sign P3: Alcazar Lot



Sign P4: Organ Pavilion

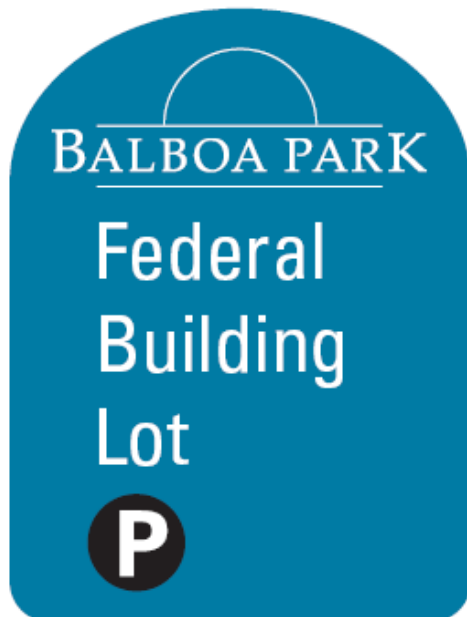
Figure IV-5. Identity Signs (continued)



Sign P5: Organ Pavilion Lot



Sign P6: Palisades Lot



Sign P7: Federal Bldg Lot



Sign P8: Inspiration Point Lot

Figure IV-5. Identity Signs (continued)



Sign P9: Inspiration Point North Lot



Sign P10: Activity Center



Sign P11: Zoo Lot



Sign P12: Carousel Lot

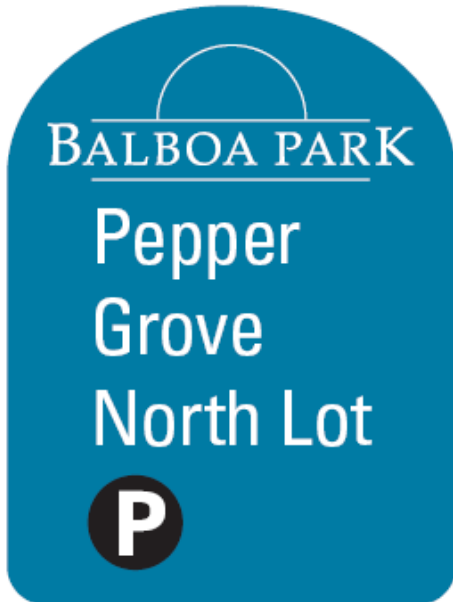
Figure IV-5. Identity Signs (continued)



Sign P13: Village Place North Lot



Sign P14: Village Place South Lot

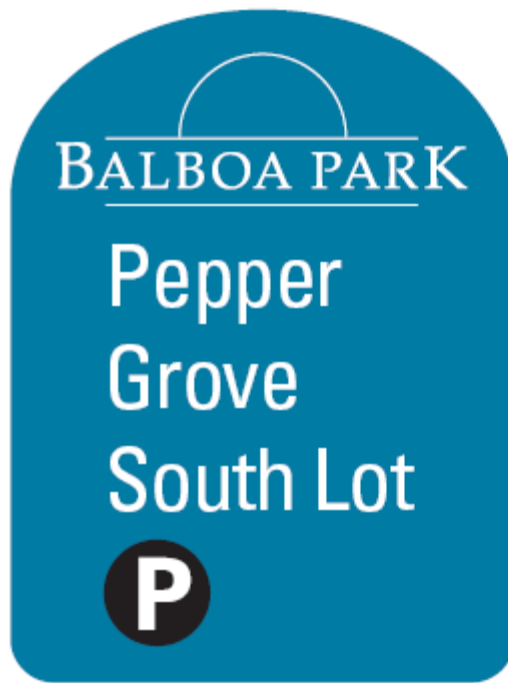


Sign P15: Pepper Grove North Lot



Sign P16: Casa de Balboa Lot

Figure IV-5. Identity Signs (continued)



Sign P17: Pepper Grove South Lot

V. PEDESTRIAN LINKAGES FOR PARKING ACCESSIBILITY

While the park has provided a high degree of accessibility for people with mobility restrictions in most locations, there are a few areas needing improvement for access to parking. The following recommendations focus on connections between parking and key destinations; they are not intended to be a comprehensive analysis of all accessibility needs for the Central Mesa or Inspiration Point.

Parking Areas

The number of accessible stalls in individual lots is appropriate to the size of the lot. However, the blue striping and accessible parking logo are too frequently faded and difficult to see. This is especially true at Inspiration Point. Accessible stalls should be more clearly marked.



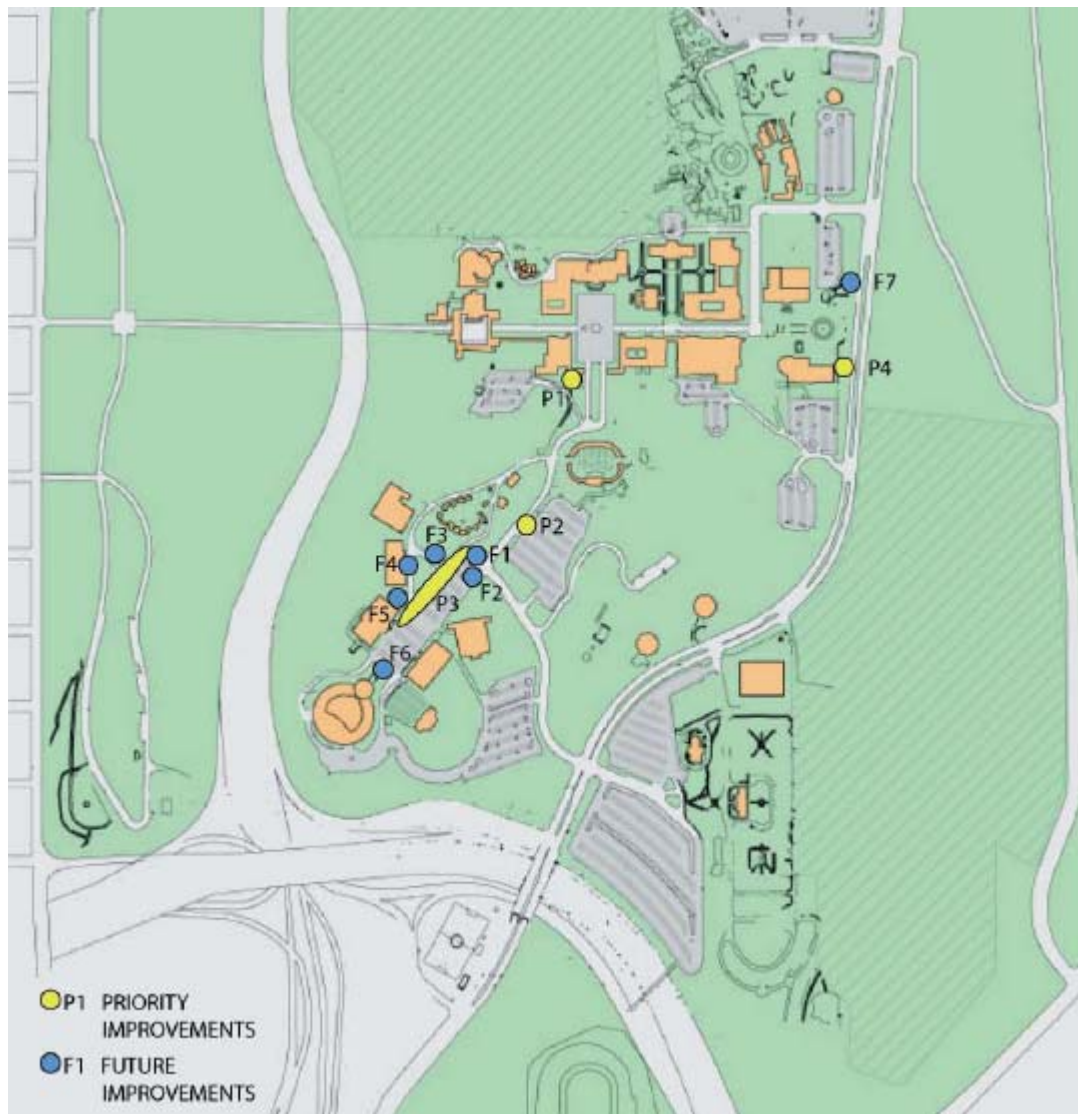
Shuttles

As has been noted previously, the existing shuttle vehicle meets the letter of the law but is awkward for people in wheelchairs or those who have difficulty with steps. A low-floor vehicle with wide doors, a simple ramp and a single step would greatly improve accessibility.

Sidewalks

Figure V-1 identifies locations for recommended walkway improvements. Each location is numbered. The number serves as a key to the recommended modification that is discussed on pages following the figure. Recommendations are grouped as “Priority Needs” that should be implemented as part of the parking management action plan, and as “Future Modifications” that would be valuable, but not essential, to the plan.

Figure V-1. Pedestrian Linkages – Location of Recommended Improvements



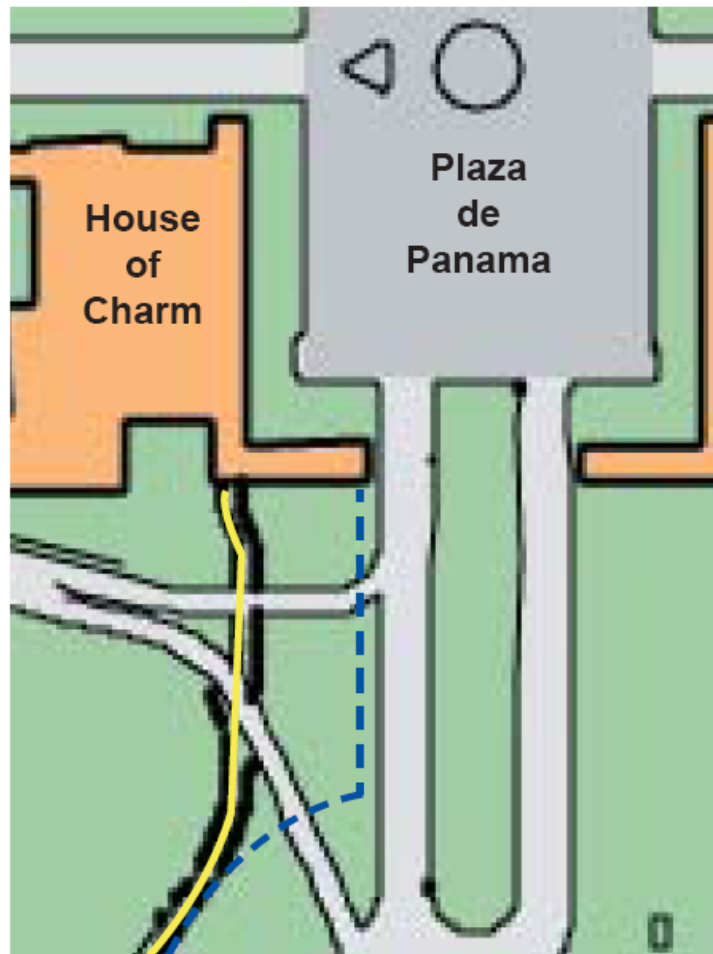
Priority Needs

Issue P1: too-steep walkway

- sidewalk exceeds 5% slope (dangerous for wheelchairs/strollers)
- bollards block access for wheelchairs and strollers

Recommendation:
Re-route pedestrian connection along roadway

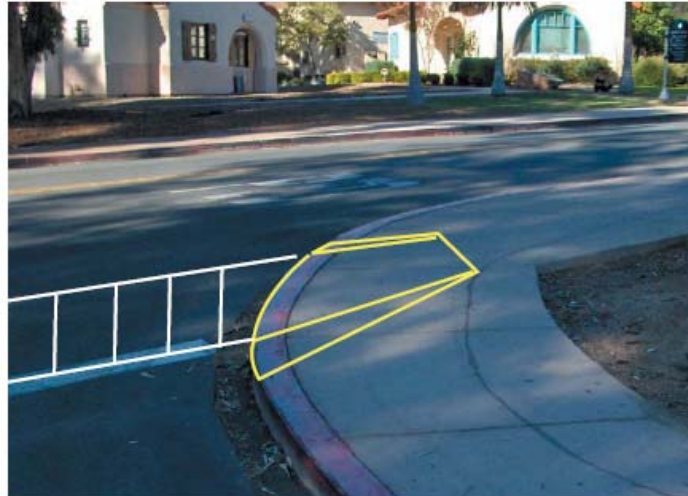
- existing pedestrian route
- - - recommended pedestrian route



Issue P2:
difficult to negotiate ramp

- ramp does not align with ramp across driveway
- user must negotiate a sharp curve and steep slope simultaneously

Recommendation:
Re-align and reconstruct ramp
Stripe new crosswalk



Issue P3:
No sidewalk

- Pan-American Plaza lacks sidewalk along entire western edge

Recommendation:

- narrow drive aisle to accomodate new sidewalk
- this approach avoids need to relocate existing light fixtures
- narrowed drive aisle will also serve as traffic-calming device



Issue P4:
Lack of connection between street and Fleet/El Prado

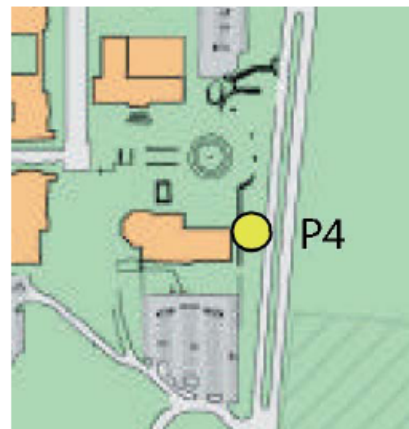
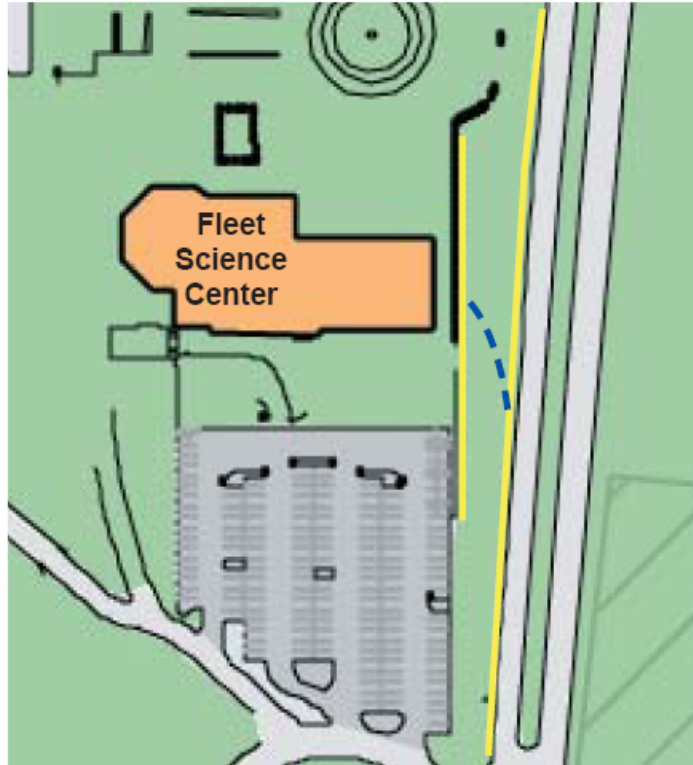
- From the south, pedestrians must walk through Fleet parking lot, or to sidewalk north of pedestrian overpass and double-back, to connect from street to El Prado

Recommendation:

- Create sidewalk connection adjacent to Fleet
- Grades north of Fleet too great to make an efficient and attractive pedestrian connection

existing sidewalk ———

recommended connection - - - -



Future Modifications

Issue F1: No sidewalk

- sidewalk does not connect to western edge of plaza

Recommendation:
Construct new sidewalk segment

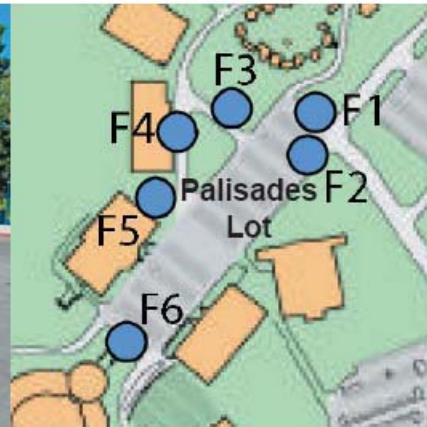


Issue F2:
Over-wide drive aisle

- approx. 40' from back of parking stall to face of curb

Recommendation:

- narrower drive aisle calms traffic
- narrow entrance to Palisades circulation by creating raised landscape island



**Issue F3:
No sidewalk**

- no streetside sidewalk connection from Pan-American Plaza to Pan-American Plaza Rd West

Recommendation:

- construct new sidewalk segment, with curb ramps
- on-street accessible parking makes it desirable to have sidewalk on north side, but adjacent grades also make this segment more difficult
- must retain existing curbline and regrade adjacent lawn area

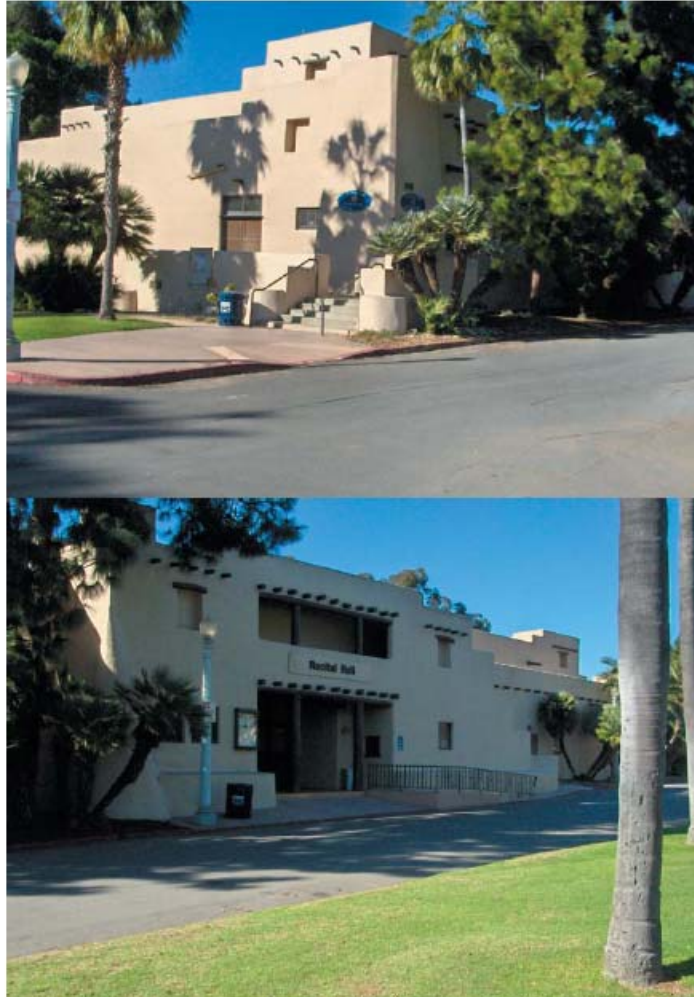


Issue F4:
Inconsistent sidewalk

- Sidewalk along Pan-American Rd west is incomplete, with inconsistent widths

Recommendation:

- mature plantings in curb-attached planting strips make it preferable to reduce drive aisle in order to accomodate new sidewalk
- narrowed drive aisle will also serve as traffic-calming device
- attached sidewalk condition does not impact fire lane access

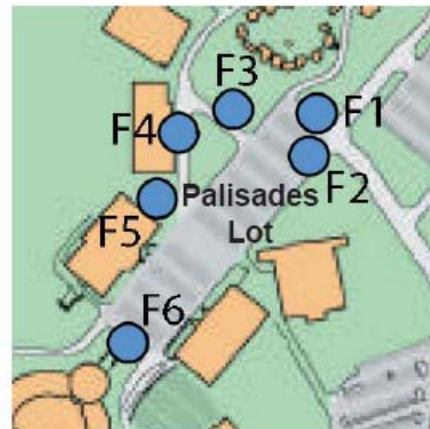


Issue F5:
Undefined pedestrian path

- wide asphalt area with ill-defined vehicular circulation does not offer a defined pedestrian connection

Recommendation:

- construct sidealk along north side of Auto Museum
- stripe crosswalk to Palisades Building
- existing curb ramp is serviceable and does not require replacement



**Issue F6:
Inconsistent sidewalk**

- Aerospace Museum has incomplete connections to its neighbors on both sides

Recommendation:

- create formal sidewalk connections to both neighboring institutions
- service access needs may dictate an at-grade connection, rather than curb-and-gutter, at this location



Issue F7:
too-steep walkway

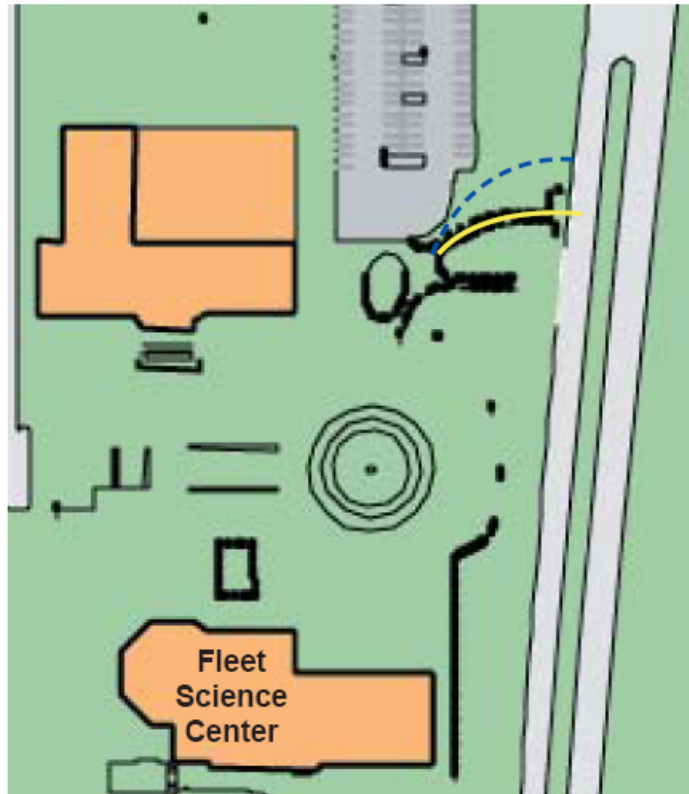
- sidewalk exceeds 5% slope

Recommendation:

- re-align path:
longer distance = gentler slope
- this re-alignment is recommended, but not as dangerous or urgent as that noted in P1

existing alignment ———

alternate alignment - - -



VI. BENEFITS AND COSTS

The parking management action plan would generate tangible benefits for the park and its visitors. It also incurs modest capital costs as well as annual operating expenses.

Benefits

Implementation of the parking management plan would:

- Free up to 450 spaces for visitors close to their destinations. On busier days, this brings nearly 3,000 people more convenient parking (based on average car occupancy of 3 persons and turnover of at least 2 vehicles per space).
- Reduce hunting for available parking. This in turn reduces vehicle miles of travel in the Central Mesa. At the Alcazar lot alone, approximately 72 vehicle miles per day are wasted in hunting. The total for the Central Mesa could be as much as 200 vehicle miles per day.
- Make more efficient use of existing parking resources. By parking employees at remote lots, close-in spaces for visitors become more readily available.
- Support higher visitor attendance. By making Inspiration Point an effective part of the park's parking supply, parking should be adequate for all but 8 or 9 days per year, primarily occurring on summer weekends.
- Defer the need to construct more parking for as many as ten years.
- Simplify visitors' navigation with an improved wayfinding system, reduce sign clutter, and create a better park image.
- Work within existing financial resources, although planning for a more robust shuttle will be needed to sustain the service and accommodate growth.

Costs

Both capital and operating costs attributable to the parking management plan are summarized in Table VI-1. It is important to note that only minimal costs are necessary to implement employee parking management. However, the success of the recommended system relies on wayfinding improvements as well as on expanding shuttle capacity, which increase capital costs.

Table VI-1. Estimated Costs (Planning Level)

Minimum Improvements to Implement Employee Parking Management				
Item	Quantity	Capital	O&M	Annualized Cost*
Security: Call Boxes	3	\$15,000	\$2,000	\$4,685
Shuttle: New Shelters	2	\$50,000	\$1,000	\$9,955
Pedestrian Facilities: Priority Projects	4	\$88,000	\$500	\$16,265
Regulatory signs in parking lots	To be determined	est. \$ 5,000	\$500	\$1,395
Administration: Parking Permits		est. \$ 1,000	\$10,000	\$10,180
After Hours Return to Parking	<i>Responsibility of Institutions/Employers</i>			
TOTAL		\$159,000	\$14,000	\$42,480
Additional Recommended Improvements				
Wayfinding: Directional Signs	28	\$15,400		\$2,760
Identity Signs	18	\$9,900	\$1,000	\$2,775
Removal of Old Signs	42	\$10,500		\$1,880
Pedestrian Facilities: Future Modifications	7 projects	\$65,000	\$500	\$12,145
Parking: Re-striping	2 projects	\$4,500	\$500	\$1,305
Layout Changes	1 project	\$37,000		\$6,630
TOTAL		\$142,300	\$2,000	\$27,495
New Shuttle Vehicles				
Vehicles	4	\$1,000,000	**	\$179,135
TOTAL		\$1,400,300	\$16,000	\$249,110
Contingency	10%	\$140,000	\$1,600	\$24,910
GRAND TOTAL		\$1,540,300	\$17,600	\$274,020

* Assumes 7 year pay-off at 6% interest

** New vehicles can be operated within existing shuttle O&M budget

VII. MONITORING SUCCESS

Active management includes actively monitoring parking and shuttle use. Specific steps to monitor parking and shuttle performance include:

Employee lots

- ❑ Check utilization periodically:
 - Daily at 10:00 a.m. during first week
 - Daily at 2:00 p.m. during first week
 - Monthly based on peak day of week for first 6 months
 - Quarterly thereafter for 1st year
 - Twice per year thereafter (preferably coordinated with checks in visitor lots described below)
- ❑ Compare number of permits issued for Inspiration Point Upper lot with number of vehicles parked at Inspiration Point Upper lot prior to 10:00 a.m.
- ❑ Review enforcement citations for lack of permit in designated permit parking areas to identify and address any problem areas.

Visitor lots

- ❑ Check utilization:
 - Daily at 10:00 a.m. during first week
 - Daily at 2:00 p.m. during first week
 - Monthly for a Tuesday and a Saturday for first 6 months
 - Quarterly for a Tuesday and a Saturday thereafter for 1st year
 - Once every April and August for a Tuesday and a Saturday
- ❑ Review (monthly) enforcement violation rates in visitor lots prior to opening hours
- ❑ Review (monthly) enforcement records for overtime parking in short-term zones on Village Place and in Plaza de Panama
- ❑ Measure turnover rates in selected visitor lots once per year (total number of vehicles parking in the lot during the day compared to the number of spaces in the lot). Compare to turnover prior to implementation of parking management plan. Suggest sampling Alcazar/Organ Pavilion/Village Place South.

Employee Shuttle

- ❑ Count number of employees riding shuttle during the morning and afternoon daily for the first two weeks.
- ❑ Note peak loads and number of persons forced to wait for next trip
- ❑ Verify round-trip times during the first week, and periodically during subsequent weeks for the first month
- ❑ Record demand for mid-day returns to Inspiration Point
- ❑ Monitor ridership monthly thereafter

Visitor Shuttle

- ❑ Count number of persons riding shuttle during midday service daily for the first two weeks. Note number boarding by stop.
- ❑ Determine duration of peak loads
- ❑ Monitor round-trip times periodically during first month
- ❑ Review ridership data monthly

Additionally, beyond the statistics, it is important to check with institutions periodically to learn about comments from visitors and employees about their experiences with parking and shuttles.

APPENDICES

A. Employment Survey Form

B. Cost Estimates

Balboa Park
Employee Transportation Survey

Please assist the Park in managing its parking needs by completing and returning this brief survey.

Organization: _____

1. How many people work at your organization each day during the month of August? Please distinguish paid employees from docents and other volunteers.

August Employment				
Day	Employees	Docents	Volunteers	Total
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				

2. If you have higher employment during any other month, please indicate that month and the total employment occurring then: Month _____ Total Employment _____
3. What are your hours of operation on weekdays? _____ On weekends _____?
4. When do employees arrive at work on a weekday?

Weekday Arrival Time	# of Employees	# of Docents	# of Volunteers
Before 7:00 a.m.			
7:00 – 7:30 a.m.			
7:30 – 8:00 a.m.			
8:00 – 8:30 a.m.			
8:30 – 9:00 a.m.			
9:00 – 9:30 a.m.			
9:30 – 10:00 a.m.			
10:00 – 10:30 a.m.			
10:30 – 11:00 a.m.			
11:00 – 11:30 a.m.			
11:30 – 12:00 p.m.			
12:00 – 12:30 p.m.			
12:30 – 1:00 p.m.			
1:00 – 1:30 p.m.			
1:30 – 2:00 p.m.			
2:00 – 2:30 p.m.			
2:30 – 3:00 p.m.			
3:00 – 3:30 p.m.			
3:30 – 4:00 p.m.			
4:00 – 4:30 p.m.			
4:30 – 5:00 p.m.			
5:00 – 5:30 p.m.			
5:30 – 6:00 p.m.			
After 6:00 p.m.			

5. How did employees get to work today, or on the most recent day they worked?

Means of Travel	Employees	Docents	Volunteers
Drive Alone			
Carpool with another Balboa Park Employee			
Dropped Off			
Bus			
Walk/Bike			

6. How many people working at your organization have disabled parking permits or otherwise require close-in parking spaces (e.g., for elderly or other persons with limited mobility)?

	Employees	Docents	Volunteers
Have disabled permits			
Require close-in spaces			

7. When do employees leave work on a weekday?

Weekday Departure Time	# of Employees	# of Docents	# of Volunteers
Before 11:00 a.m.			
11:00 – 11:30 a.m.			
11:30 a.m. – 12:00 p.m.			
12:00 p.m. – 12:30 p.m.			
12:30 – 1:00 p.m.			
1:00 – 1:30 p.m.			
1:30 – 2:00 p.m.			
2:00 – 2:30 p.m.			
2:30 – 3:00 p.m.			
3:00 – 3:30 p.m.			
3:30 – 4:00 p.m.			
4:00 – 4:30 p.m.			
4:30 – 5:00 p.m.			
5:00 – 5:30 p.m.			
5:30 – 6:00 p.m.			
6:00 – 6:30 p.m.			
6:30 – 7:00 p.m.			
7:00 – 7:30 p.m.			
7:30 – 8:00 p.m.			
8:00 – 8:30 p.m.			
8:30 – 9:00 p.m.			
9:00 – 9:30 p.m.			
9:30 – 10:00 p.m.			
10:00 – 10:30 p.m.			
10:30 – 11:00 p.m.			
After 11:00 p.m.			

Please return this form by mail or fax to:

The Tilghman Group
1776 NE 62nd Street
Seattle, WA 98115
Fax: 206-577-6953

Thank you!

Balboa Park Parking Management Action Plan

Estimated Probable Cost of Construction

ID No.	Item	quantity	unit	unit cost		cost
Permits						
	Building Permit	1	LS	\$	2,000.00	\$ 2,000
	Electrical Permit	1	LS	\$	2,000.00	\$ 2,000
Permits Subtotal					\$	4,000
Construction						
Signs						
Wayfinding: Directional Signage						
	3'-6" x 4'-8" sign, aluminum panel, sign post (Powdercoat), vinyl letters	28	EA	\$	550.00	\$ 15,400
Wayfinding: Identity Signage						
	3'-6" x 4'-8" sign, aluminum panel, sign post (Powdercoat), vinyl letters	18	EA	\$	550.00	\$ 9,900
Wayfinding: Demolition/removal						
		42	EA	\$	250.00	\$ 10,500
Signs Subtotal					\$	35,800
Pedestrian Links: Priority Needs						
P1: Too steep walkway (Alcazar)						
	Clear and grub	2,600	SF	\$	0.35	\$ 910
	Remove concrete walkway - 4" thick	1,420	SF	\$	3.00	\$ 4,260
	Remove existing curb and gutter	40	LF	\$	10.00	\$ 400
	Finish grading	2600	SF	\$	0.25	\$ 650
	Concrete pedestrian ramp	5	EA	\$	1,000.00	\$ 5,000
	Sidewalk	2600	SF	\$	5.00	\$ 13,000
	Crosswalk striping	30	LF	\$	10.00	\$ 300
	Turf - sod	1420	SF	\$	1.00	\$ 1,420
	Shrubs and groundcover	400	SF	\$	5.00	\$ 2,000
	Soil preparation	400	SF	\$	0.25	\$ 100
	Mulch	400	SF	\$	0.50	\$ 200
	Irrigation repairs	1	LS	\$	2,000.00	\$ 2,000
	Plant establishment - 120 calendar days	1420	SF	\$	0.12	\$ 170
P2: Difficult to negotiate ramp						
	Remove concrete walkway	65	SF	\$	3.00	\$ 195
	Remove existing curb and gutter	12	LF	\$	10.00	\$ 120
	Concrete pedestrian ramp	1	EA	\$	1,000.00	\$ 1,000
	Sidewalk	17	SF	\$	5.00	\$ 85
	Crosswalk striping	55	LF	\$	10.00	\$ 550

Balboa Park Parking Management Action Plan

Estimated Probable Cost of Construction

ID No.	Item	quantity	unit	unit cost		cost
P3: No sidewalk (Palisades west)						
	Remove existing curb	600	LF	\$	10.00	\$ 6,000
	Saw cut and remove asphalt paving and base	4720	SF	\$	4.00	\$ 18,880
	Concrete pedestrian ramp	8	EA	\$	1,000.00	\$ 8,000
	Sidewalk	4,720	SF	\$	5.00	\$ 23,600
	Curb and gutter	600	LF	\$	15.00	\$ 9,000
	Crosswalk striping	140	LF	\$	10.00	\$ 1,400
	Turf - sod	850	SF	\$	1.00	\$ 850
	Shrubs and groundcover	120	SF	\$	5.00	\$ 600
	Soil preparation	970	SF	\$	0.25	\$ 243
	Mulch	120	SF	\$	0.50	\$ 60
	Irrigation repairs	1	LS	\$	2,000.00	\$ 2,000
	Plant establishment - 120 calendar days	970	SF	\$	0.12	\$ 116
P4: No sidewalk (east Prado)						
	Clear and grub	600	SF	\$	0.35	\$ 210
	Finish grading	600	SF	\$	0.25	\$ 150
	Excavate and export soil	11	CY	\$	20.00	\$ 220
	Sidewalk	600	SF	\$	5.00	\$ 3,000
	Turf - sod	150	SF	\$	1.00	\$ 150
	Soil preparation	150	SF	\$	0.25	\$ 38
	Irrigation Repairs	1	LS	\$	2,000.00	\$ 2,000
	Plant establishment - 120 calendar days	150	SF	\$	0.12	\$ 18
Pedestrian Links: Priority Needs Subtotal					\$	108,895
Pedestrian Links: Future Modifications						
F1: No sidewalk (Palisades north)						
	Clear and grub	700	SF	\$	0.35	\$ 245
	Finish grading	700	LF	\$	0.25	\$ 175
	Concrete pedestrian ramp	1	LF	\$	1,000.00	\$ 1,000
	Sidewalk	700	LF	\$	5.00	\$ 3,500
	Turf - sod	100	SF	\$	1.00	\$ 100
	Irrigation repairs	1	LS	\$	2,000.00	\$ 2,000
	Plant establishment - 120 calendar days	100	EA	\$	0.12	\$ 12

Balboa Park Parking Management Action Plan

Estimated Probable Cost of Construction

<i>ID No.</i>	<i>Item</i>	<i>quantity</i>	<i>unit</i>	<i>unit cost</i>		<i>cost</i>
F2: Over-wide drive aisle (Palisades)						
	Saw cut and remove asphalt paving and base	1100	SF	\$	4.00	\$ 4,400
	Finish grading	1100	SF	\$	0.25	\$ 275
	Curb and gutter	140	LF	\$	15.00	\$ 2,100
	Import topsoil	80	CY	\$	40.00	\$ 3,200
	Shrubs and groundcover	1100	SF	\$	5.00	\$ 5,500
	Soil preparation	1100	SF	\$	0.25	\$ 275
	Mulch	1100	SF	\$	0.50	\$ 550
	Irrigation repairs	1	LS	\$	2,000.00	\$ 2,000
	Plant establishment - 120 calendar days	1100	SF	\$	0.12	\$ 132
F3: No sidewalk (to Balboa Park Club)						
	Clear and grub	1730	SF	\$	0.35	\$ 606
	Finish grading	1730	SF	\$	0.25	\$ 433
	Excavate and export soil	163	CY	\$	20.00	\$ 3,260
	Concrete pedestrian ramp	1	EA	\$	1,000.00	\$ 1,000
	Sidewalk	1730	SF	\$	5.00	\$ 8,650
	Crosswalk striping	20	LF	\$	10.00	\$ 200
	Turf - sod	2200	SF	\$	1.00	\$ 2,200
	Irrigation repairs	1	LS	\$	2,000.00	\$ 2,000
	Plant establishment - 120 calendar days	2200	SF	\$	0.12	\$ 264
F4: Inconsistent Sidewalk (Pan American Road West)						
	Remove existing curb and gutter	300	LF	\$	10.00	\$ 3,000
	Saw cut and remove asphalt paving and base	2420	SF	\$	4.00	\$ 9,680
	Concrete pedestrian ramp	2	EA	\$	1,000.00	\$ 2,000
	Sidewalk	2420	SF	\$	5.00	\$ 12,100
	Curb and gutter	300	LF	\$	15.00	\$ 4,500
F5: Undefined pedestrian path at Park Administration						
	Concrete pedestrian ramp	1	EA	\$	1,000.00	\$ 1,000
	Crosswalk striping	80	LF	\$	10.00	\$ 800

Balboa Park Parking Management Action Plan

Estimated Probable Cost of Construction

ID No.	Item	quantity	unit	unit cost		cost
F6: No sidewalk (Aerospace Museum)						
	Clear and grub	670	SF	\$	0.35	\$ 235
	Remove existing curb	80	LF	\$	10.00	\$ 800
	Finish grading	670	SF	\$	0.25	\$ 168
	Concrete pedestrian ramp	2	EA	\$	1,000.00	\$ 2,000
	Sidewalk - integral color	1100	SF	\$	7.00	\$ 7,700
	Curb and gutter	80	LF	\$	15.00	\$ 1,200
	Crosswalk striping	440	LF	\$	10.00	\$ 4,400
	Turf - sod	45	SF	\$	1.00	\$ 45
	Soil preparation	80	SF	\$	0.25	\$ 20
	Irrigation repair	1	LS	\$	2,000.00	\$ 2,000
	Plant establishment - 120 calendar days	80	SF	\$	0.12	\$ 10
F7: Too steep walkway (Plaza de Balboa)						
	Clear and grub	1350	SF	\$	0.35	\$ 473
	Remove concrete walkway - 4" thick	850	SF	\$	3.00	\$ 2,550
	Finish grading	1350	SF	\$	0.25	\$ 338
	Excavate and export soil	25	CY	\$	20.00	\$ 500
	Sidewalk - integral color	1350	SF	\$	7.00	\$ 9,450
	Shrubs and groundcover	850	SF	\$	5.00	\$ 4,250
	Soil preparation	850	SF	\$	0.25	\$ 213
	Mulch	850	SF	\$	0.50	\$ 425
	Irrigation repairs	1	LS	\$	2,000.00	\$ 2,000
	Plant establishment - 120 calendar days	850	SF	\$	0.12	\$ 102
Pedestrian Links: Future Modifications Subtotal					\$	116,032
Parking and Shuttle						
Shuttle Stop: Federal Building Lot						
	Saw cut and remove asphalt paving and base	5000	SF	\$	4.00	\$ 20,000
	Sidewalk	5000	SF	\$	5.00	\$ 25,000
	Bus shelter	1	EA	\$	100,000.00	\$ 100,000
	Trash receptacle	1	EA	\$	1,000.00	\$ 1,000
	8" Bench	1	EA	\$	1,500.00	\$ 1,500

Balboa Park Parking Management Action Plan

Estimated Probable Cost of Construction

ID No.	Item	quantity	unit	unit cost		cost
Shuttle Stop: Pepper Grove North Lot						
	Clear and grub	100	SF	\$	0.35	\$ 35
	Sidewalk - integral color	100	SF	\$	7.00	\$ 700
	Bus shelter	1	EA	\$	100,000.00	\$ 100,000
	Trash receptacle	1	EA	\$	1,000.00	\$ 1,000
	8' Bench	1	EA	\$	1,500.00	\$ 1,500
Parking Modifications: Village Place North Lot						
	Clear and grub	4000	SF	\$	0.35	\$ 1,400
	Remove existing curb and gutter	700	LF	\$	10.00	\$ 7,000
	Saw cut and remove asphalt paving and base	630	SF	\$	4.00	\$ 2,520
	Tree relocation	1	EA	\$	1,000.00	\$ 1,000
	Tree removal	3	EA	\$	500.00	\$ 1,500
	Curb and gutter	300	LF	\$	15.00	\$ 4,500
	Parking lot striping	650	LF	\$	2.00	\$ 1,300
	Asphalt paving and base	4000	SF	\$	6.00	\$ 24,000
	Turf - sod	300	SF	\$	1.00	\$ 300
	Irrigation system repairs	2000	LS	\$	2.00	\$ 4,000
	Plant establishment - 120 calendar days	300	SF	\$	0.12	\$ 36
Parking Modifications: Alcazar Lot						
	Parking lot striping	25	LF	\$	2.00	\$ 50
	Concrete pad - 6" thick with wire mesh	240	SF	\$	7.00	\$ 1,680
	Screen fencing	120	LF	\$	30.00	\$ 3,600
Parking Modifications: Inspiration Point Lot						
	Parking lot striping	180	LF	\$	2.00	\$ 360
Parking Modifications: Plaza de Panama (center island only)						
	Saw cut and remove asphalt paving and base	4040	SF	\$	4.00	\$ 16,160
	Finish grading	4040	SF	\$	0.25	\$ 1,010
	Curb and gutter	260	LF	\$	15.00	\$ 3,900
	Turf - sod	4040	SF	\$	1.00	\$ 4,040
	Imported topsoil	300	CY	\$	40.00	\$ 12,000
	Irrigation system	4040	SF	\$	2.00	\$ 8,080
	Plant establishment - 120 calendar days	4040	SF	\$	0.12	\$ 485

Balboa Park Parking Management Action Plan

Estimated Probable Cost of Construction

ID No.	Item	quantity	unit	unit cost		cost
Parking Modifications: Plaza de Panama (extended)						
	Saw cut and remove asphalt paving and base	10000	SF	\$	4.00	\$ 40,000
	Finish grading	10000	SF	\$	0.25	\$ 2,500
	Curb and gutter	1140	LF	\$	15.00	\$ 17,100
	Turf - sod	10000	SF	\$	1.00	\$ 10,000
	Imported topsoil	740	CY	\$	40.00	\$ 29,600
	Irrigation system	10000	SF	\$	2.00	\$ 20,000
	Plant establishment - 120 calendar days	10000	SF	\$	0.12	\$ 1,200
Parking and Shuttle Subtotal					\$	470,056
Subtotal					\$	734,783
Misc. Construction Costs						
	Prevailing Wage (20% of Subtotal)	1	LS	\$	146,956.54	\$ 146,957
	Mobilization (2.5% of Subtotal + Prevailing Wage)	1	LS	\$	22,043.48	\$ 22,043
	Field Orders (5% of Subtotal + Prevailing wage)	1	LS	\$	44,086.96	\$ 44,087
	Bonds & Ins. (10%of subtotal + Prevailing wage)	1	LS	\$	88,173.92	\$ 88,174
Construction Subtotal					\$	1,036,044
Contingency and Inflation (choose one level of Contingency only)						
	Contingency (Project inception - 35% Const. Subtotal)	1	LS	\$	362,615.26	\$ 362,615
	Inflation - (4% per year Const. Subtotal)	3	YR	\$	41,441.74	\$ 124,325
Project Management						
	Consultant Selection and Award - EOC	1	LS	\$	2,000.00	\$ 2,000
	Consultant / Professional Services 9% (or 6% - 10% Const. Subtotal)	1	LS	\$	93,243.92	\$ 93,244
	Publicly noticed meeting(s) beyond Council Policy	3	EA	\$	3,000.00	\$ 9,000
	Construction Contracts Processing - plan check, bid, & award (\$5000 - 2% of Const. Subtotal)	1	LS	\$	5,000.00	\$ 5,000
	Construction Contracts review & award - EOCP / SCOP	1	LS	\$	2,000.00	\$ 2,000
	Park Planning & Dev. Project Admin. (8% Const. Subtotal)	1	LS	\$	82,883.49	\$ 82,883
	Field Engineering (E&CP)(9% of Const. Subtotal)	1	LS	\$	93,243.92	\$ 93,244
Total Project Cost					\$	1,810,355

This estimate does not include any hazardous waste removal or remediation.